SUPERIOR
Manufacturing & Hydraulics

TECHNICAL MANUAL

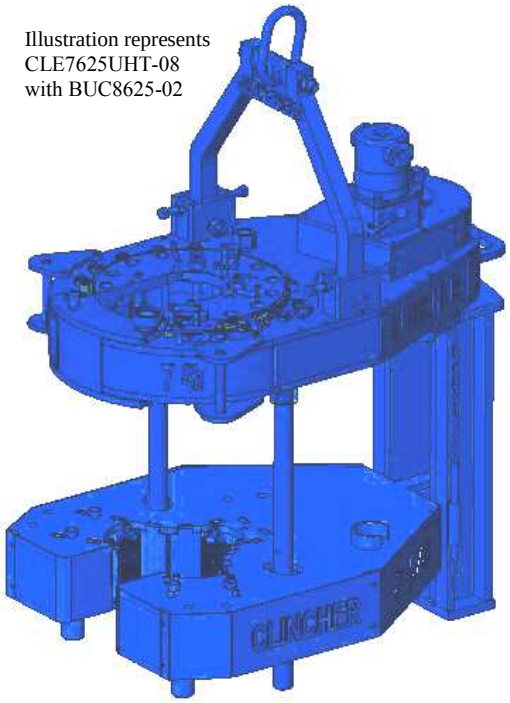
7 5/8" CLINCHER® UHT TONG

AND

7 5/8" OR 8 5/8" UHT BACKUP

Photo represents
CLE7625UHT-02
with BUC8625-02

Illustration represents
CLE7625UHT-08
with BUC8625-02



COVERS
TONG MODEL'S
CLE7625UHT-02 , -08, -09

BACKUP MODELS
BUC7625-02 / BUC8625-02, -05 & -06 / BUCT8625

HANGER ASSEMBLIES
BUC7600 / BUC7600-02 / BUC7600-04 / BUCF7625

Published: 10/2004

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Broussard, Louisiana 70518
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The products described in this manual are covered by U.S. and foreign Patents and/or pending Patent Applications.

This manual is not a controlled document and is subject to revision without notice. To receive updates and insure you have access to the latest information concerning the 7 5/8" **CLINCHER®** UHT Tong and 7 5/8" or 8 5/8" UHT Backup, we request you complete this form and return the lower half to SUPERIOR Manufacturing and Hydraulics by mail or facsimile. Access to our manuals can also be acquired through our web site www.superior-manf.com. Select the tab '**CLINCHER®** Products', select the equipment from the list to get Specs page, select the tab 'Download Manual'.

Name: _____
Company: _____
Address: _____
Address: _____
City: _____ **State:** _____
Postal Code: _____ **Country:** _____
Telephone: _____ **Fax:** _____

Tong Model No.: _____ **Serial No.:** _____
Backup Model No.: _____ **Serial No.:** _____
Assembly Date: _____

---

7 5/8" CLINCHER® UHT Tong and 7 5/8" or 8 5/8" UHT Backup Technical Manual Registration Form

Name: _____
Company: _____
Address: _____
Address: _____
City: _____
Postal Code: _____ **Country:** _____
Telephone: _____ **Fax:** _____

Tong Model No.: _____ **Serial No.:** _____
Backup Model No.: _____ **Serial No.:** _____
Assembly Date: _____

Return To:

SUPERIOR Mfg. & Hyd.
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Web Site: www.superior-manf.com

TABLE OF CONTENTS

Hazard Warnings ***1***

Description, Features, & Specifications ***2***

Jaws, Adapters, & Die Information ***3***

Assembly Torque Requirements ***4***

Operational Instructions ***5***

Maintenance Instructions & Trouble Shooting ***6***

Spare Parts Recommendations ***7***

Accessories and Options ***8***

UHT TONG Illustrations ***9***

UHT BACKUP & Mounting Kit Illustrations ***10***

Lift Cylinder Illustration ***11***

Load Cell and Torque Gauge ***12***

Motor Service Manuals ***13***

Valve Technical Data ***14***

REVISION TABLE			
Section	***Page***	***Date***	***Description***

DECLARATION OF CONFORMITY

Superior Manufacturing and Hydraulics Incorporated hereby declare that:

The **7 5/8" CLINCHER® Unit CLE7625UHT-02**, complete with **8 5/8" Backup BUC8625-02** and **Hanger Assembly BUC7600-01** and as;

A hydraulically powered Tong and Backup unit provided for a means of making up, or breaking out, high torque tubular connections to the following specification:

Maximum Torque	**30,000 ft. lbs. / 40,675 Nm**
Maximum Operating Pressure	3,000 P.S.I. / 207 Bar
RPM @ 35 GPM / 132 LPM / Manual Gearbox	Max Recommended Flow Rate 65 GPM / 227 LPM*
High	42
Low	7
Tong Handle Length	36" / 91.4 cm
Backup Handle Length	32" / 81.3 cm
Length	56" / 142.2 cm
Width	34" / 86.4 cm
Weight- Tong w/ Backup & Rigid Bail [approximate]	3,100 lbs. / 1,406 Kg
2 Tong Jaw Sizes Limited to 14,000 ft. lbs. / 30,000 ft. lbs.	2 3/8" thru 4 1/2" / 4 1/2" thru 7 5/8
1 Backup Jaw Size	2 3/8" thru 8.750"
	*With optional A-35 valve 78 RPM High and 13 RPM Low

Is in accordance with;

The European Machinery Directive 98/37/EC being implemented in the United Kingdom by the Supply of Machinery (Safety) Regulations 1992 and as amended by S.I. 1992/3073, S.I. 1994/2063 and S.I. 2005/831.

And the;

The European Directive on Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres 94/9/EC, being implemented in the United Kingdom by The Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres Regulations 1996 (SI 1996/192) and as amended by The Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres (Amendment) Regulations 2001 (SI 2001 No.3766).

DECLARATION OF CONFORMITY

This equipment has been retrospectively assessed and was found to be in accordance with the following European Harmonized Standards:

BS EN ISO 12100 Part 1: Safety of Machinery. Basic concepts, general principles for design

BS EN ISO 12100 Part 2: Safety of Machinery. Technical principles

BS EN 13463 Part 1: Non-electrical Equipment Intended for Use in Potentially Explosive Atmospheres - Basic Method and Requirements.

BS EN 13463 Part 5: Non-electrical equipment intended for use in potentially explosive atmospheres - Protection by constructional safety c

BS EN 953 Safety of Machinery – Guards – General Requirements for the Design and Construction of Fixed and Movable Guards

BS EN 982 Safety of Machinery – Safety Requirements for Fluid Power Systems and Their Components - Hydraulics

BS EN 1050 Safety of Machinery – Principles for Risk Assessment
The American Institute of Steel Construction (AISC) Construction Code – 9th Edition DNV Classification Note 30.2 – Fatigue Strength Analysis for Mobile Offshore Units

This equipment has been classified as suitable for use within a potentially explosive atmosphere as follows.

CE Ex **II 2 G c T4**

I hereby declare that the 7 5/8" **CLINCHER®** Unit CLE7625UHT-02, complete with 8 5/8" Backup BUC8625-02 and Hanger Assembly BUC7600-01 has been designed and manufactured to comply with the relevant sections and essential health and safety requirements of the aforementioned Standards, Codes and Directives / Regulations.

Gary Ebbrell
Technical Director

February 2007
Date

Note: InterSkill Global Limited, Suite 4 Badentoy Business Centre, Badentoy Crescent, Badentoy Industrial Estate, Portlethen, Aberdeenshire acted as consultants to Superior Manufacturing and Hydraulics Incorporated, 4225 Highway 90 East, Broussard, Louisiana, 70518, USA with specific regard to compliance with European Directives for Machinery and Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres. InterSkill Global Limited are Superior Manufacturing and Hydraulics Incorporated's representatives within the EEA.

DECLARATION OF CONFORMITY

McCoy Drilling & Completions hereby declares that:

The **7 5/8" CLINCHER® Casing Tong CLE7625UHT-09,** complete with **8 5/8”CLINCHER® Backup BUCT8625** and as;

A hydraulically powered Tong and Backup unit provided for a means of making up, or breaking out, high torque tubular connections to the following specification:

Maximum Torque	**30,000 ft. lbs. / 40,675 Nm**
Maximum Operating Pressure	3,000 P.S.I. / 207 Bar
RPM @ 35 GPM / 132 LPM / Manual Gearbox	Max Recommended Flow Rate 65 GPM / 227 LPM
High	42
Low	7
Tong Handle Length	37 1/4" / 94.6 cm
Backup Handle Length	32” / 81.3 cm
Length	57.5" / 146 cm
Width	39.5" / 100.3 cm
Height	67.5" / 171.4 cm
Weight [approximate]	3,200 lbs. / 1,451 Kg
Tong Jaw Sizes Limited to 14,000 ft. lbs. / 30,000 ft. lbs.	2 3/8” thru 4 1/2” / 4 1/2" thru 7 5/8”
Backup Jaw Size	2 3/8” thru 8.750”

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CE Ex II 2G c IIB T4 Gc

I hereby declare that the **7 5/8" CLINCHER® Casing Tong CLE7625UHT-09,** complete with **8 5/8”CLINCHER® Backup BUCT8625** has been designed and manufactured to comply with the relevant sections and essential health and safety requirements of the aforementioned Standards, Codes and Directives / Regulations.

_____

_____

Date

7 5/8" CLINCHER® UHT Tong and Backup

HAZARD WARNING

Nomenclature used in this manual:

WARNING	concerns an operating procedure or practice that, if not strictly observed, can result in injury to personnel or loss of life
Caution	concerns an operating procedure or practice that, if not strictly observed, can result in damage to or destruction of equipment
Note	concerns an operating procedure or practice that needs highlighting

CLINCHER® UHT Tongs and Backups are manufactured to provide a means of making up or breaking out high torque tubular connections. They utilize high pressure hydraulic fluid power which can cause the tong to move suddenly and with great force if the tong is not properly rigged up and operated. **CLINCHER®** Tongs and Backups contain rotating and reciprocating parts which can severely or fatally injure personnel who are operating, repairing, or near this equipment during its operation. **WARNING: Tongs and Backups are not to be operated by untrained personnel or personnel with diminished physical or mental capacity. No work of any type, including changing of dies, is to be carried out while the tong and backup are connected to any hydraulic power unit.**

CLINCHER® UHT Tongs and Backups are heavy tools. They should be suspended from a secure, high strength 7/8" IWRC minimum diameter wire cable with a 31 ton minimum breaking strength. The wire rope should be hung as close to the center of the wellbore as possible, without interfering with drilling equipment operation, to allow the tong to be readily swung into the working position. Vertical position control should be achieved by means of a **CLINCHER®** hydraulically operated lift cylinder/spring hanger. **WARNING: Users must insure the entire suspension system including cables, rig mounting points, lift cylinders, tong lifting brackets/bridles, winches, pulleys, counter weights, etc., are capable of handling the static weight of the tong and backup plus any loads which could be transferred to it during the makeup or breakout process PLUS any shock loads which may be seen during operation. This system must readily allow downward movement equal to a minimum of the thread makeup distance to avoid overloading the suspension system and/or damage to equipment.**

A 1" IWRC minimum diameter wire cable with a 51.7 ton minimum breaking strength or better, should be attached at a 90 degree angle to the tong and at the same level to insure proper readout of torque indicator. A SNUBBING LINE should always be attached even when an integral backup is in use to provide additional safety in the event of a backup slippage. **WARNING: Users must provide a means of safely controlling the tong and backup movements in all directions when it is in use. Failure to account for its size, weight, movement and the amount of torque developed could result in personnel injury or death.**

7 5/8" CLINCHER® UHT Tong and Backup

HAZARD WARNING

CLINCHER® Tongs and Backups utilize high pressure hydraulic fluids. Portions of the tong and backup, control valves, hydraulic lines and cylinders may contain high pressure fluid even when the power unit is de-energized and the fluid supply hoses are disconnected. During normal operation the temperature of the hydraulic fluids as well as hoses, piping, valves, etc., can rise to a level which can cause burns. **WARNING: Personal protective gear including safety glasses, face shields, protective gloves and protective clothing must be worn to guard against the hazards of high pressure fluids. Tight fitting clothing is required to prevent entanglement in rotating components. These tools should be serviced by thoroughly trained and qualified hydraulic technicians using procedures to safely insure hydraulic pressure is bled from these circuits.**

The **CLINCHER®** UHT Tong is equipped with a door interlock system which prevents tong rotation whenever the door is open. This system is to be tested before each mobilization and at every shift change. Should this system be determined to be inoperative, the tong is to be removed from service and tagged as ***in-operative*** until repairs are made. **CAUTION:** Operating the tong with the door in the open position could result in severe damage to the equipment and will void all manufacturer warranties. **WARNING: Operating the tong with the door open by means of a defective or bypassed door interlock system exposes the operator and nearby personnel to potentially fatal hazards.**

No attempt should be made to operate the **CLINCHER®** UHT Tong and Backup for any purpose other than which it is intended. This system is capable of generating very large clamping forces and torsional loads which, if improperly applied or controlled, could result in damage to the tubular, to the tong and backup, or could possibly result in injury or death of personnel. Do not attempt to operate the unit without correct dies and the proper size tubular being in the tong and backup. See Section 3 for more information concerning the selection and use of dies.
CAUTION: Operating this equipment without the correct size, type, and orientation of dies can result in damage to the equipment or tubulars being handled.

HYDRAULIC PRODUCT SAFETY

WARNING: Valve lever (spool) may "stick" (not center) under certain conditions allowing the hydraulic equipment to continue to operate and could cause serious injury, death or equipment failure.

VALVE SAFETY: Read and follow instructions carefully. Failure to observe instructions and guidelines may cause serious injury, death or equipment failure. A sticking valve (spool bind) may be caused by one or more of the following factors:

DIRTY OIL: Oil must be filtered to a minimum of 25 microns. Filters should be changed regularly - spin-on types after 50 hours of initial use and then after every two hundred fifty hours of use. Use of a condition indicator is recommended. Consult your tractor or implement owner's manual for filtration and changing recommendations for internal systems.

OIL REQUIREMENTS: Premium quality anti-wear type oil with a viscosity between 100 and 200 SSU at operating temperatures. Certain synthetic oils may cause spool seals to swell and the valve to stick. If in doubt, call CROSS Engineering.

IMPROPER HOOK UP OR MOUNTING: Always use the proper size fittings. Hook up "in" & "out" as noted on the valve body. Do not overtorque pipe fittings. Mounting surfaces should be flat and care should be used when tightening mounting bolts. Over-tightened bolts can cause spool bind and casting breakage. When hooking a valve in series, always use a power beyond sleeve. Consult your tractor or implement manual to make sure you have the proper quick disconnect line connected to the inlet of the remote valve.

MISAPPLICATION: Always use the proper valve for the job. CONVERTA, CD, CS or CA valves should never be used for metered heavy load lifting - loaders or similar applications. Use an open center valve for open center applications and a closed center valve for closed applications. If in doubt, check with your tractor dealer. Contact CROSS if the valve allows the hydraulic equipment to creep excessively.

MAINTENANCE: Make sure all bolts are tightened and torqued to the recommended specification. Bent or broken parts should not be used. Replace immediately. Always use exact replacements. Always protect valve spool from paint overspray.

Faulty quick disconnects can cause high back pressures and sticking spools. Check quick disconnects periodically to make sure they are functioning properly. If valve spool does not center or appears to stick, do not use!

PUMPS & MOTORS SAFETY:

A relief or bypass in your hydraulic system is necessary to prevent pump from breakage due to overpressurization. Use correct fittings and proper oil as noted in the technical service manual packed with each unit. Change oil as recommended by your implement or tractor manufacturer.

CYLINDER SAFETY:

Check clevis clearances before, during and after extending the cylinder and before using the cylinder under pressure to avoid possible injury, or bent or broken rods caused by binding. Never operate a cylinder above recommended pressures. Never use a cylinder as a safety device when transporting equipment.

PINHOLE LEAKS:

If you observe a pinhole leak, discontinue use of the component. If oil has penetrated your skin or contacted your eye, seek medical attention immediately!

DESCRIPTION and APPLICATION

The **CLINCHER®** UHT Tong and Backup system is an "open-throat" design which can handle tubulars as small as 2 1/16 inches to as large as 7 5/8 inches in diameter. This system features two (2) jaws in the tong and three (3) jaws in the backup which encircle the pipe. Wrap around jaws and dies, combined with our low friction jaw technology, constant radial load cam system and compensating jaw design provide exceptional gripping capabilities with reduced pipe deformation, stress and marking. Using our non-marking aluminum die system or **GRIT FACE™** dies in the UHT Tong and Backup will now allow stainless steel corrosion resistant alloys (CRA) to be run as quickly and easily as a traditional tong runs conventional steel tubulars.

Notable Features and Benefits

Low Friction Jaws	increases cam angle efficiency to allow use of aluminum dies
Splined Die System	aligns the die with the tubular and more evenly distributes radial load, essentially wrapping the die around the tube reduces pipe stress, deformation and minimizes marking
Constant Cam Angle	insures an adequate radial load is available regardless of relative rotation to enhance performance on undersized pipe
Die Retention Method	provides an enhanced method of preventing equipment damage and die loss if the pipe is inadvertently moved while the tong or backup are still gripping the pipe

In addition to these unique features listed above, the **CLINCHER®** UHT Tong and Backup System is also equipped with numerous standard features including:

Door Interlock	prevents tong ring gear rotation whenever the tong door is open but allows control and operation of backup and lift cylinder at all times
Encoder Adapter	accepts customer's turns encoder to signal to a torque/turn computer
Pressure Control Valve	adjustable pressure control valves allow the customer to limit the amount of pressure applied and torque developed
Tong Handles with Closed Covers	protects operators hands

The features described above are covered by US and foreign patents or pending US and foreign patents.

DESCRIPTION and APPLICATION

TONG APPLICATION

After completing the make-up or break-out cycle, the jaws are opened by reversing the tong motor to drive the ring gear and cam surfaces in the opposite direction until the reversing pin contacts the ring gear shoulder. Springs are used to return the jaws to their fully open position.

BACKUP APPLICATION

The **CLINCHER®** UHT Backup's front jaws are hydraulic cylinders. During a jaw closing cycle, the front jaws advance and clamp the pipe against the fixed rear jaw. Once locked on the pipe, pressure is locked in the backup cylinder by a load holding valve. When opening, the front jaws retract to allow the pipe to be removed.

The **CLINCHER®** UHT **LOCKJAW™** Backup has an "open throat" design with three jaws that encircle the pipe. The front jaws are operated by cam surfaces on the rear jaw cylinder. During a jaw closing cycle, the front jaws swing in and interlock as the rear die approaches the pipe. Once locked on the pipe, pressure is locked in the backup cylinder by a load holding valve. When opening the backup jaws, the cylinder operation is reversed to retract the rear die and unlock the jaws. Springs move the front jaws to their fully open position.

SPECIFICATIONS

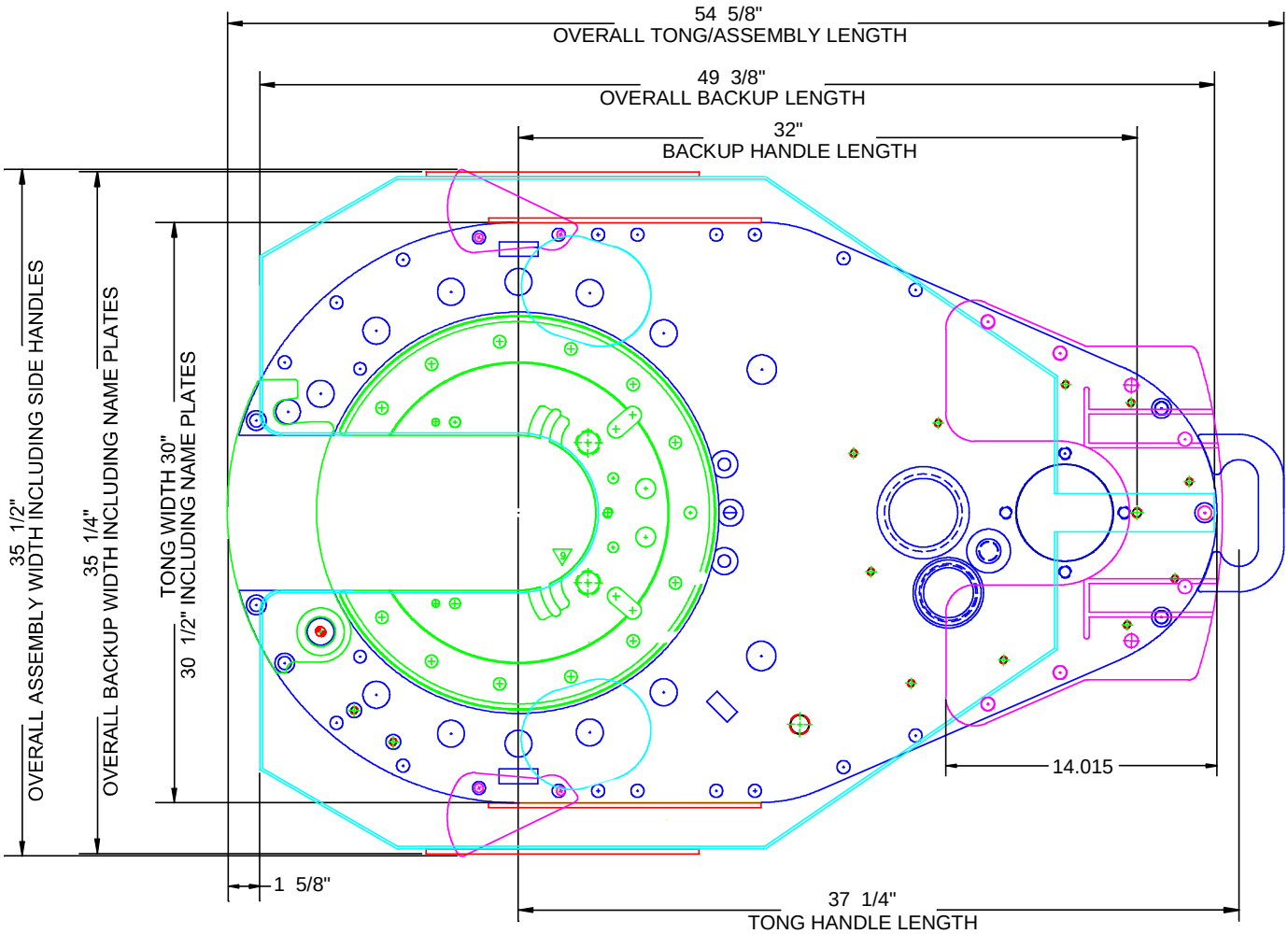
Maximum Torque [1]	
High Gear	3,500 ft.lbs./ 4,745.4 Nm
"UHT" Low Gear	30,000 ft.lbs./40,674.6 Nm
Maximum Operation Pressure	3,000 psi/207 Bar
RPM @ 35 GPM/132.5 LPM: Manual Gearbox	
Max. Recommended Flow Rate: 35 GPM/132.5 LPM (Using Standard A-20 Valve Package)	
High	42
Low	7
Max. Recommended Flow Rate: 65 GPM/246 LPM (Using Optional A-35 Valve Package)	
High	78
Low	13
Handle Length UHT Tong	37 1/4" / 94.6 cm
Handle Length UHT Backup	32" / 81.3 cm
Overall Length UHT Tong	54 5/8" / 138.7 cm
Overall Length UHT Backup	49 3/8" / 125.4 cm
Overall Width w/o Handles / UHT Tong	30 1/2" / 77.5 cm
Overall Width w/o Handles / UHT Tong & UHT Backup	35 1/4" / 89.5 cm
Overall Width w/ Handles	35 1/2" / 90.2 cm
Overall Height UHT Tong	35 7/16" / 90.0 cm
Overall Height w/ UHT Backup & Hanger Bracket	62 9/16" / 158.6 cm
Overall Height w/ UHT Backup & Bail Assembly	65 1/4" / 165.7 cm
Weight UHT Tong (approximate)	2,392 lbs. / 1,087 kg
Weight UHT Backup (approximate)	808 lbs. / 367 kg
Weight UHT Tong w/UHT Backup (approximate)	3,200 lbs. / 1,455 kg
Bottom Hanger (approximate)	225 lbs. / 102 kg
Tong Legs (approximate)	50 lbs. / 23 kg
Combined Weight Tong w/ UHT Backup w/ Hanger & Legs (approximate)	3,475 lbs. / 1,576 kg
Tong Jaw Options [1]	2 3/8" thru 4 1/2" 4 3/4" thru 7 5/8"
1 Backup Jaw Size / BUC7625-02	2 3/8" thru 7 5/8"
1 Backup Jaw Size / BUC8625-02	2 3/8" thru 8 3/4"
Gripping Range for Dovetail Tong Jaws (under nominal jaw or adapter sizes)	3/8" / 1.5 cm undersize

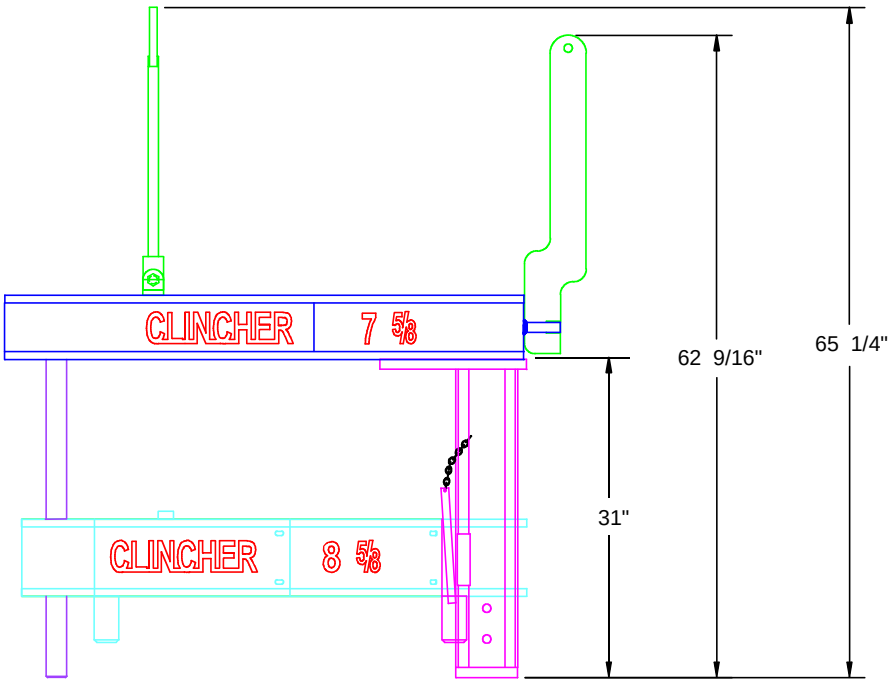
[1] CAUTION: When using Low Friction Jaws, Tongs should be limited to 50% of maximum torque rating.

Operates using Steel Tooth Wrap Around Dies, **GRIT FACE™** Wrap Around Dies and Aluminum Wrap Around Dies

Standard Equipment:
- Door Interlock
- Self Adjusting Brake
- Handles Tong
- 3 Point Lifting Bridle (f/CLE7625 UHT)

Optional Equipment:
- Two Speed Hydraulic Motor
- Hydraulic Cage Plate Brake System
- Electronic Solenoid Dump Valve
- Hydraulic Intensifier for Backup
- Shipping Stand, or Skid
- Varying Outlets for Torque Turns Computer Sending Units





7 5/8" UHT TONG & 7 5/8" OR 8 5/8" UHT BACKUP DIMENSIONS

SUPERIOR Manufacturing & Hydraulics
4225 HWY. 90 EAST
BROUSSARD, LA 70518
(318) 837-8847

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REF: P:\Manuals\Equip Manuals\Dwgs\CLE7625UHT-02\Dimensions rev1.wpg

SPECIFICATIONS
CLE7625UHT-08 / BUC8625-02

Maximum Torque [1]	
High Gear	3,500 ft.lbs./ 4,745.4 Nm
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Handle Length UHT Backup	32" / 81.3 cm
Overall Length UHT Tong	54 5/8" / 138.7 cm
Overall Length UHT Backup	49 3/8" / 125.4 cm
Overall Width UHT Tong w/o Handles	30 1/2" / 77.5 cm
Overall Width UHT Tong w/ Handles	35" / 88.9 cm
Overall Width UHT Tong w/ Handles & UHT Backup	36 1/4" / 92.1 cm
Overall Height UHT Tong w/ Bail Assembly	39 1/2" / 100.3 cm
Overall Height UHT Backup	13 1/2" / 34.3 cm
Overall Height UHT Tong w/ Backup & Hanger Bracket	72 1/2" / 184.1 cm
Weight UHT Tong (approximate)	2,392 lbs. / 1,087 kg
Weight UHT Backup (approximate)	808 lbs. / 367 kg
Weight UHT Tong w/UHT Backup (approximate)	3,200 lbs. / 1,455 kg
Bottom Hanger (approximate)	293 lbs. / 133 kg
Tong Legs (approximate)	77 lbs. / 35 kg
Combined Weight Tong w/ UHT Backup w/ Hanger & Legs (approximate)	3,570 lbs. / 1,619 kg
Tong Jaw Options [1]	2 3/8" thru 4 1/2" 4 3/4" thru 7 5/8"
1 Backup Jaw Size / BUC7625-02	2 3/8" thru 7 5/8"
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Gripping Range for Dovetail Tong Jaws (under nominal jaw or adapter sizes)	3/8" / 1.5 cm undersize

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Operates using Steel Tooth Wrap Around Dies, **GRIT FACE™** Wrap Around Dies and Aluminum Wrap Around Dies

Standard Equipment:
- Door Interlock
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Optional Equipment:
- Two Speed Hydraulic Motor
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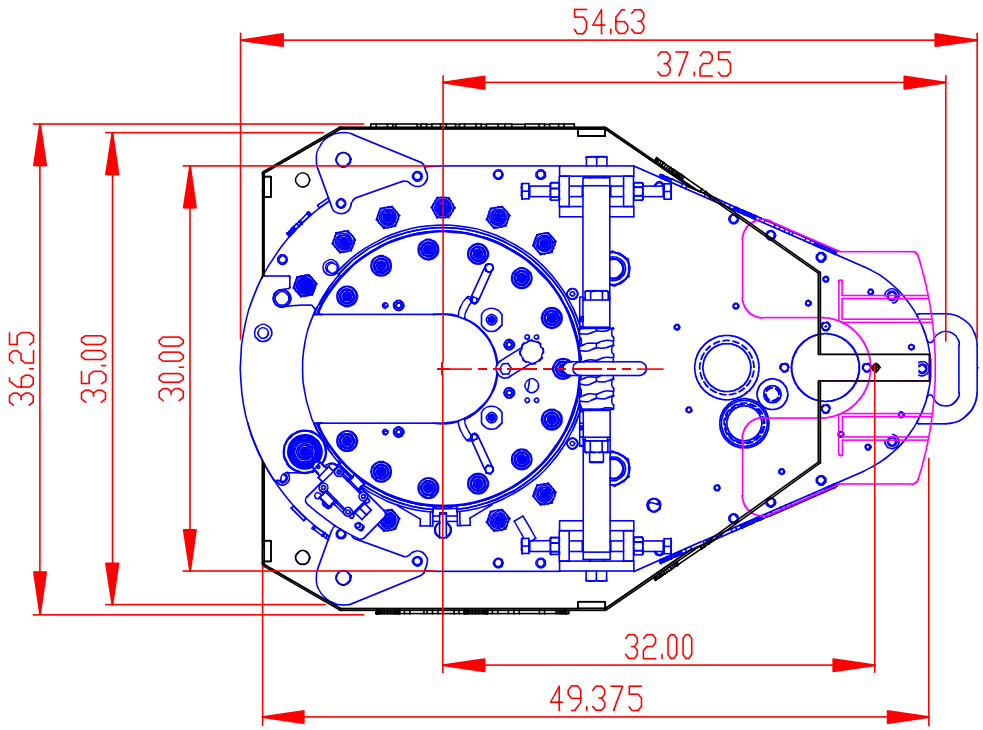
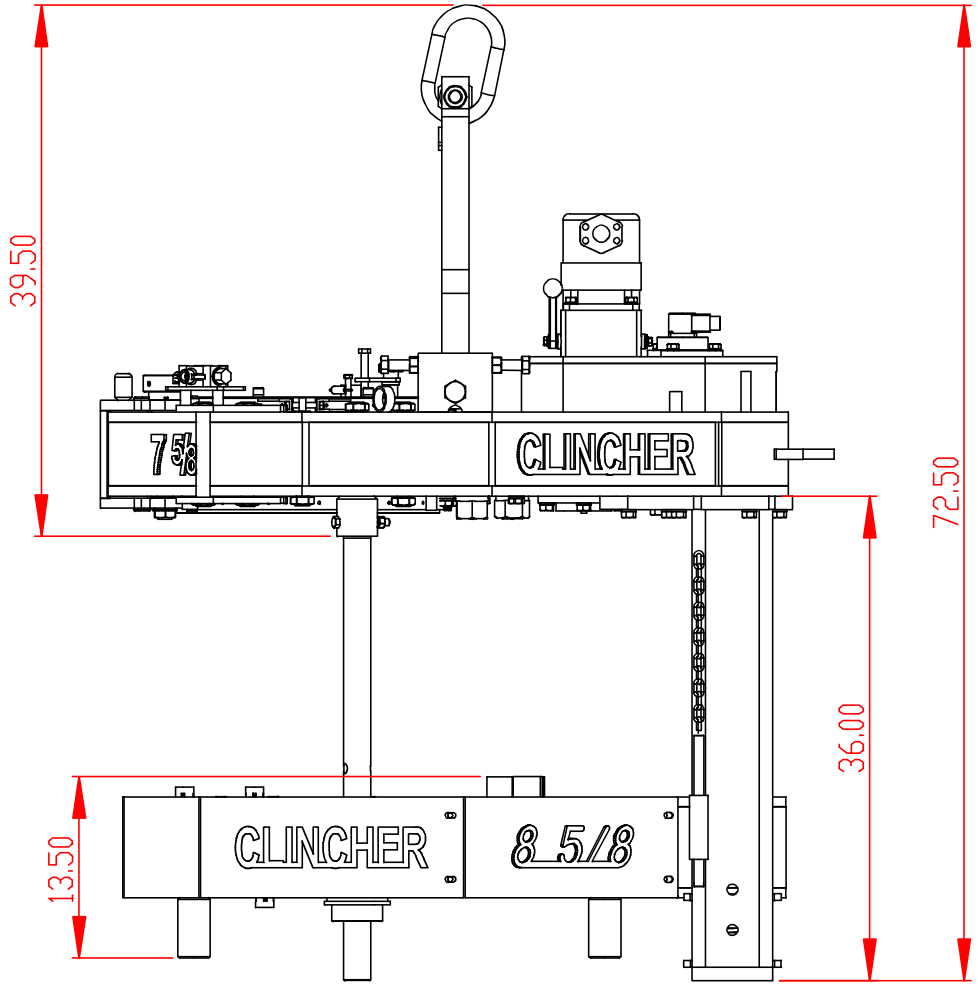
- Varying Outlets for Torque Turns Computer Sending Units





7 5/8" UHT TONG CLE7625UHT-08 & 8 5/8" UHT BACKUP BUC8625-02 DIMENSIONS

SUPERIOR Manufacturing & Hydraulics
4225 HWY. 90 EAST
BROUSSARD, LA 70518
(318) 837-8847

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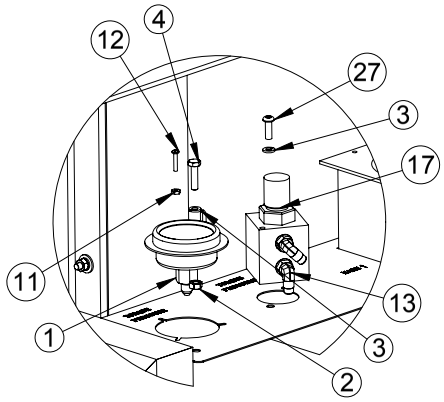
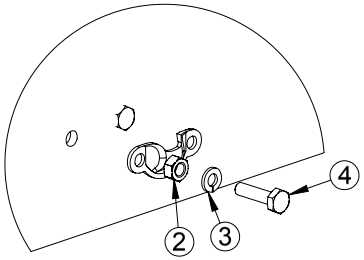
		09/11/07
REV. #	LOG #	DATE

REF: P:\Manuals\Equip Manuals\Dwgs\CLE7625UHT-08\Dimensions.wpg

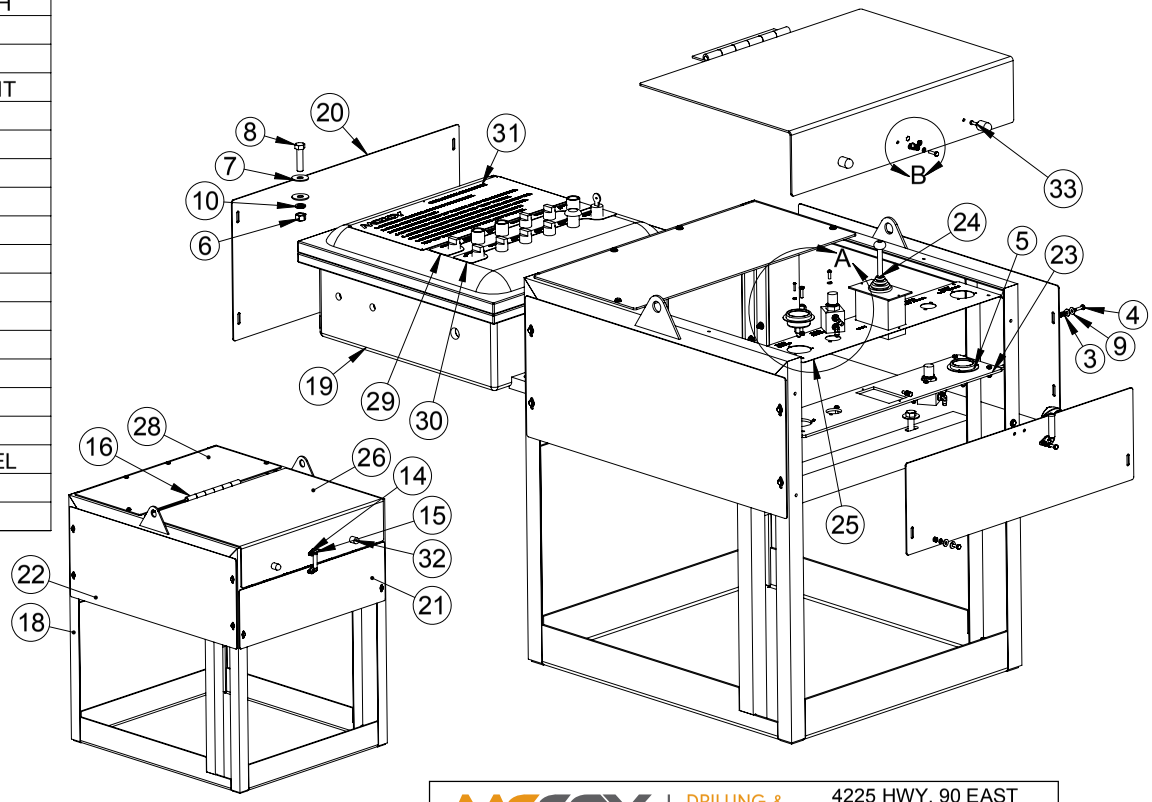
Item #	Qty.	Part Number	Part Name
1	2	4-4 gtx	1/4" MJIC X 1/4" FNPT
2	24	100	1/4"-20 HEX NUT GR8
3	28	101	1/4" LOCKWASHER
4	26	105	1/4"-20 X 1" HHCS GR8
5	2	133-6500	0-3000 PSI GAUGE
6	4	194	5/8-11 NC NUT (194)
7	8	195-A	5/8" FLATWASHER
8	4	202	5/8"-11 X 2 1/2" HHCS
9	36	1008-B2	1/4" FLATWASHER
10	4	1151	5/8 LW
11	6	1150-A	#6-32 BRASS NUT
12	6	1150-B	#6-32 x 3/4" BRASS SCREW
13	6	1486-A	90 1/4" O-RING X 1/4" MJIC
14	1	1344A260b	STAINLESS STEEL DRAW CATCH
15	1	1344A260a	STAINLESS STEEL DRAW LATCH
16	1	1582A654	HINGE
17	2	CRSS20009-01	PANEL MOUNT RELIEF VALVE
18	1	RCC-100	CONTROL CONSOLE WELDMENT
19	1	RCC-103	PLC ENCLOSURE
20	1	RCC-104	FRONT COVER
21	1	RCC-104-01	FRONT COVER
22	2	RCC-105	SIDE COVER PLATE
23	1	RCC-106	CONSOLE UNDERLAY
24	1	RCC-107	PROPORTIONAL JOYSTICK
25	1	RCC-108	CONSOLE OVERLAY
26	1	RCC-150-S3	CONSOLE COVER PLATE
27	6	SST-08	1/4-20 X 3/4 BHCS
28	1	RCC-150-S1	CONSOLE COVER
29	1	EMRCC-101	JUNCTION BOX LABEL #1
30	1	EMRCC-102	JUNCTION BOX LABEL #1
31	1	RCC-110	OPERATION PROCEDURE PANEL
32	2	RCC-111	COVER HANDLE
33	2	101-A	1/4" SS LOCKWASHER



DETAIL A
SCALE 1 : 6



DETAIL B
SCALE 1 : 3



REMOTE TONG CONTROL PANEL

ASSEMBLY NO. EMRCC-100

MCCOY DRILLING & COMPLETIONS
MOVING GLOBAL ENERGY FORWARD

4225 HWY. 90 EAST
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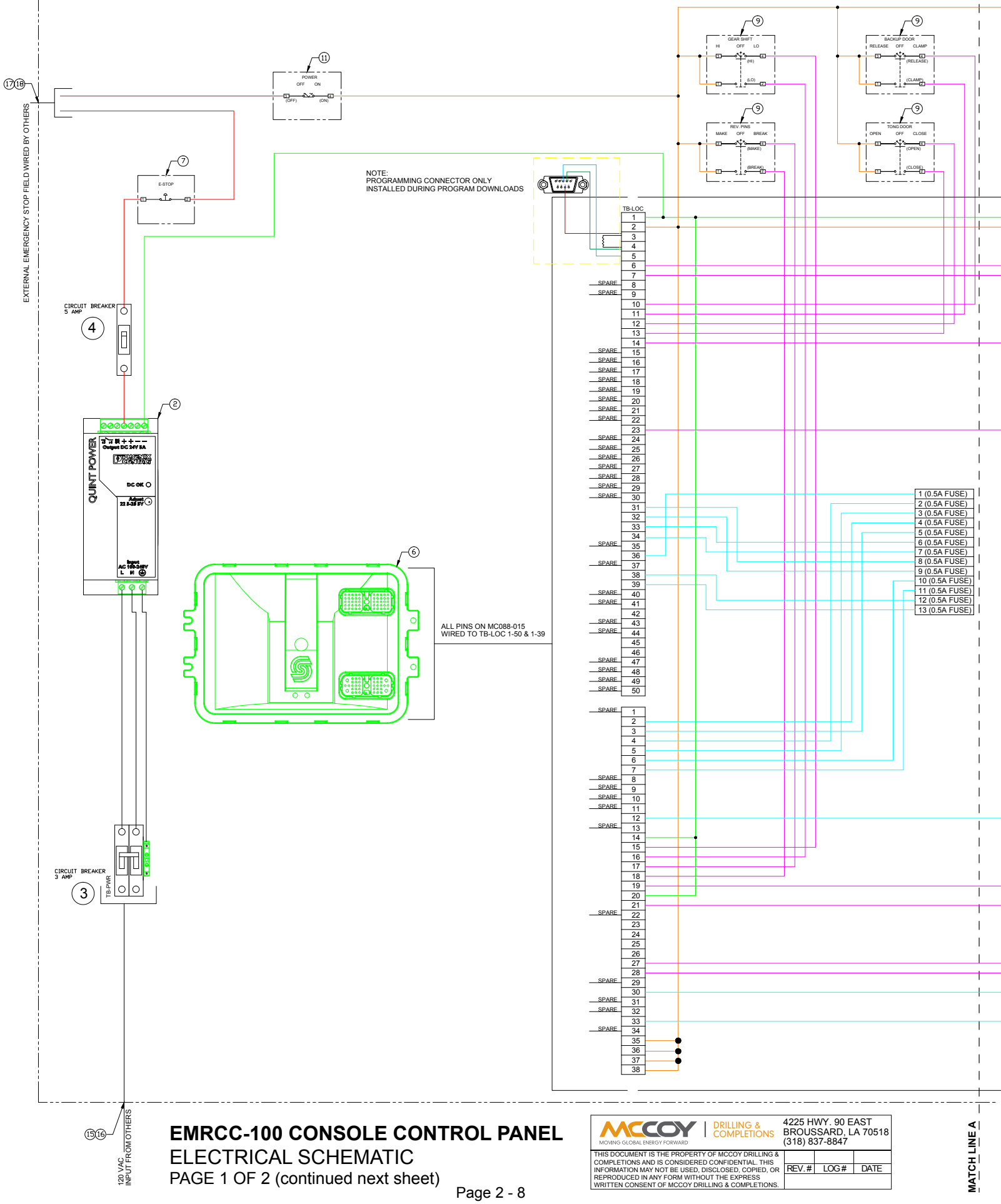

EMRCC-100 CONSOLE CONTROL PANEL

ELECTRICAL SCHEMATIC

PAGE 1 OF 2 (continued next sheet)

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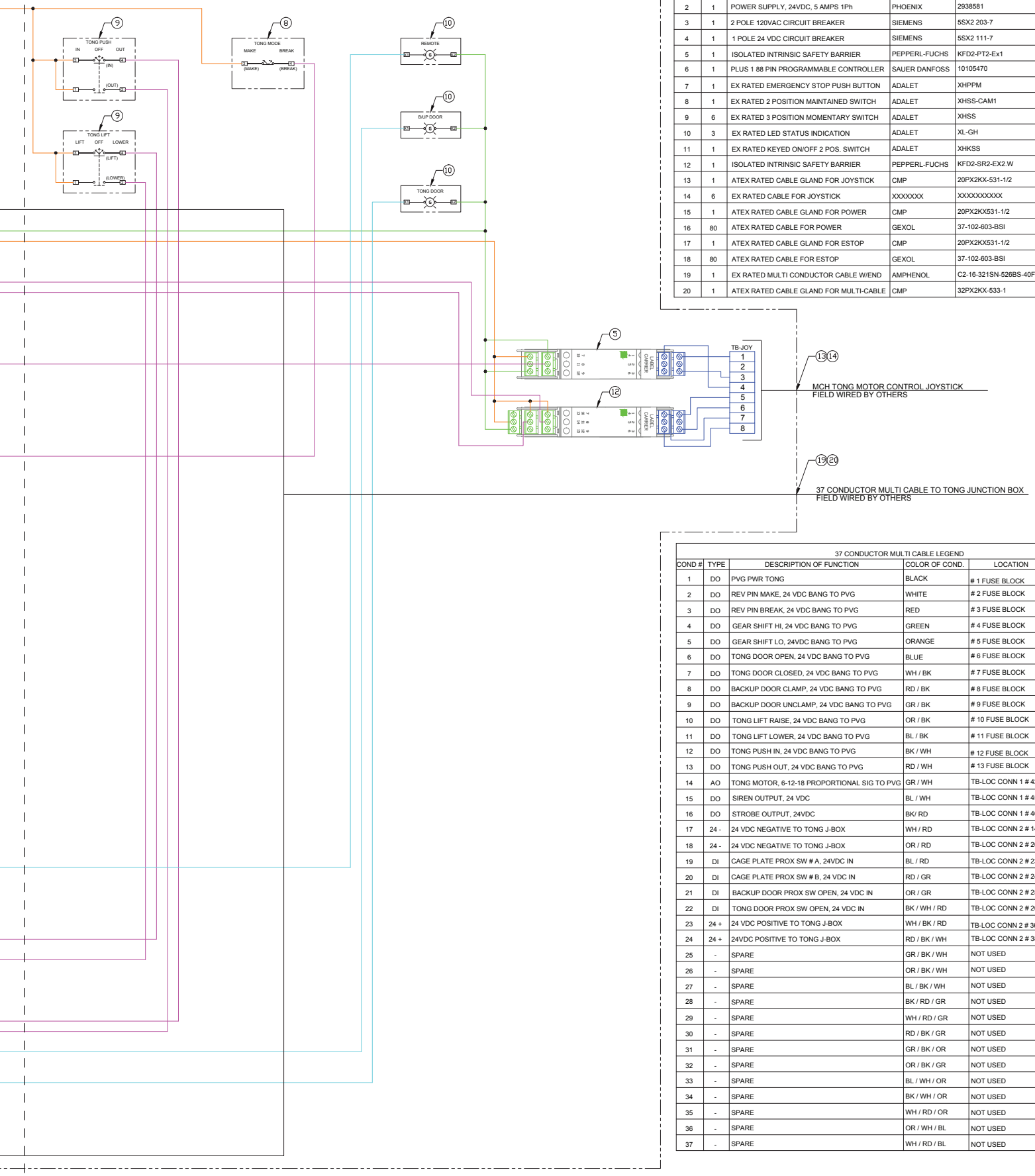

BILL OF MATERIAL

ITEM	QTY	DESCRIPTION	MANUFACTURER	PART NUMBER
1	1	ENCLOSURE, EX, 24" X 24" X 08"	ADALET	XCE 242408
2	1	POWER SUPPLY, 24VDC, 5 AMPS 1Ph	PHOENIX	2938581
3	1	2 POLE 120VAC CIRCUIT BREAKER	SIEMENS	5SX2 203-7
4	1	1 POLE 24 VDC CIRCUIT BREAKER	SIEMENS	5SX2 111-7
5	1	ISOLATED INTRINSIC SAFETY BARRIER	PEPPERL-FUCHS	KFD2-PT2-Ex1
6	1	PLUS 1 88 PIN PROGRAMMABLE CONTROLLER	SAUER DANFOSS	10105470
7	1	EX RATED EMERGENCY STOP PUSH BUTTON	ADALET	XHPPM
8	1	EX RATED 2 POSITION MAINTAINED SWITCH	ADALET	XHSS-CAM1
9	6	EX RATED 3 POSITION MOMENTARY SWITCH	ADALET	XHSS
10	3	EX RATED LED STATUS INDICATION	ADALET	XL-GH
11	1	EX RATED KEYED ON/OFF 2 POS. SWITCH	ADALET	XHKSS
12	1	ISOLATED INTRINSIC SAFETY BARRIER	PEPPERL-FUCHS	KFD2-SR2-EX2.W
13	1	ATEX RATED CABLE GLAND FOR JOYSTICK	CMP	20PX2KX-531-1/2
14	6	EX RATED CABLE FOR JOYSTICK	XXXXXXX	XXXXXXXXXX
15	1	ATEX RATED CABLE GLAND FOR POWER	CMP	20PX2KX531-1/2
16	80	ATEX RATED CABLE FOR POWER	GEXOL	37-102-603-BSI
17	1	ATEX RATED CABLE GLAND FOR ESTOP	CMP	20PX2KX531-1/2
18	80	ATEX RATED CABLE FOR ESTOP	GEXOL	37-102-603-BSI
19	1	EX RATED MULTI CONDUCTOR CABLE W/END	AMPHENOL	C2-16-321SN-526BS-40FT
20	1	ATEX RATED CABLE GLAND FOR MULTI-CABLE	CMP	32PX2KX-533-1

37 CONDUCTOR MULTI CABLE LEGEND

COND #	TYPE	DESCRIPTION OF FUNCTION	COLOR OF COND.	LOCATION
1	DO	PVG PWR TONG	BLACK	# 1 FUSE BLOCK
2	DO	REV PIN MAKE, 24 VDC BANG TO PVG	WHITE	# 2 FUSE BLOCK
3	DO	REV PIN BREAK, 24 VDC BANG TO PVG	RED	# 3 FUSE BLOCK
4	DO	GEAR SHIFT HI, 24 VDC BANG TO PVG	GREEN	# 4 FUSE BLOCK
5	DO	GEAR SHIFT LO, 24VDC BANG TO PVG	ORANGE	# 5 FUSE BLOCK
6	DO	TONG DOOR OPEN, 24 VDC BANG TO PVG	BLUE	# 6 FUSE BLOCK
7	DO	TONG DOOR CLOSED, 24 VDC BANG TO PVG	WH / BK	# 7 FUSE BLOCK
8	DO	BACKUP DOOR CLAMP, 24 VDC BANG TO PVG	RD / BK	# 8 FUSE BLOCK
9	DO	BACKUP DOOR UNCLAMP, 24 VDC BANG TO PVG	GR / BK	# 9 FUSE BLOCK
10	DO	TONG LIFT RAISE, 24 VDC BANG TO PVG	OR / BK	# 10 FUSE BLOCK
11	DO	TONG LIFT LOWER, 24 VDC BANG TO PVG	BL / BK	# 11 FUSE BLOCK
12	DO	TONG PUSH IN, 24 VDC BANG TO PVG	BK / WH	# 12 FUSE BLOCK
13	DO	TONG PUSH OUT, 24 VDC BANG TO PVG	RD / WH	# 13 FUSE BLOCK
14	AO	TONG MOTOR, 6-12-18 PROPORTIONAL SIG TO PVG	GR / WH	TB-LOC CONN 1 # 42
15	DO	SIREN OUTPUT, 24 VDC	BL / WH	TB-LOC CONN 1 # 45
16	DO	STROBE OUTPUT, 24VDC	BK/ RD	TB-LOC CONN 1 # 46
17	24 -	24 VDC NEGATIVE TO TONG J-BOX	WH / RD	TB-LOC CONN 2 # 14
18	24 -	24 VDC NEGATIVE TO TONG J-BOX	OR / RD	TB-LOC CONN 2 # 20
19	DI	CAGE PLATE PROX SW # A, 24VDC IN	BL / RD	TB-LOC CONN 2 # 23
20	DI	CAGE PLATE PROX SW # B, 24 VDC IN	RD / GR	TB-LOC CONN 2 # 24
21	DI	BACKUP DOOR PROX SW OPEN, 24 VDC IN	OR / GR	TB-LOC CONN 2 # 25
22	DI	TONG DOOR PROX SW OPEN, 24 VDC IN	BK / WH / RD	TB-LOC CONN 2 # 26
23	24 +	24 VDC POSITIVE TO TONG J-BOX	WH / BK / RD	TB-LOC CONN 2 # 36
24	24 +	24VDC POSITIVE TO TONG J-BOX	RD / BK / WH	TB-LOC CONN 2 # 38
25	-	SPARE	GR / BK / WH	NOT USED
26	-	SPARE	OR / BK / WH	NOT USED
27	-	SPARE	BL / BK / WH	NOT USED
28	-	SPARE	BK / RD / GR	NOT USED
29	-	SPARE	WH / RD / GR	NOT USED
30	-	SPARE	RD / BK / GR	NOT USED
31	-	SPARE	GR / BK / OR	NOT USED
32	-	SPARE	OR / BK / GR	NOT USED
33	-	SPARE	BL / WH / OR	NOT USED
34	-	SPARE	BK / WH / OR	NOT USED
35	-	SPARE	WH / RD / OR	NOT USED
36	-	SPARE	OR / WH / BL	NOT USED
37	-	SPARE	WH / RD / BL	NOT USED

MATCH LINE A

EMRCC-100 CONSOLE CONTROL PANEL

ELECTRICAL SCHEMATIC

PAGE 2 OF 2

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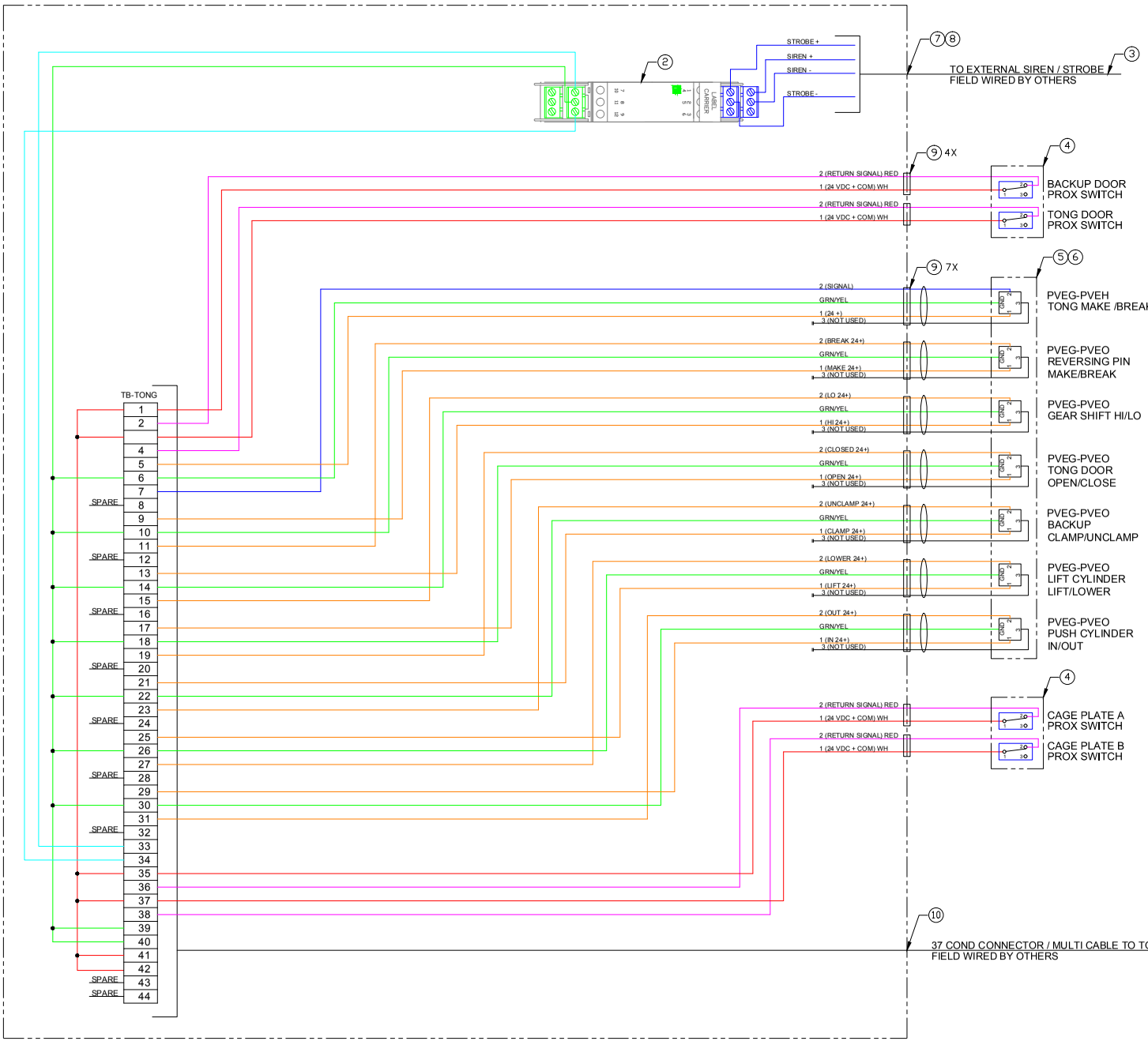

BILL OF MATERIAL				
ITEM	QTY	DESCRIPTION	MANUFACTURER	PART NUMBER
1	1	ENCLOSURE, EX, 10" X 12" X 06"	ADALET	XCPX-101206-N4X
2	1	ISOLATED INTRINSIC SAFETY BARRIER	PEPPERL-FUCHS	KFD0-SD2-EX1.1045
3	1	SIREN/STROBE	E2S	IS-MC1-R/R
4	4	EX PROXIMITY SWITCH	EURO SWITCH	ES4022
5	1	PVG 120 PROPORTIONAL COIL PVEH	SAUER DANFOSS	155G4053EX
6	6	PVG 32 ON/OFF COIL	SAUER DANFOSS	157B4218EX
7	1	ATEX NON-ARMOURED CABLE GLAND	CMP	20S16PXSS2K1RA531
8	1	EX RATED MULTI CONDUCTOR CABLE	GEXOL	37-102-604-IBS
9	11	ATEX NON-ARMOURED CABLE GLAND	CMP	20PX2KX-531-1/2
10	1	ATEX RATED MULTI PLUG FEMALE	AMPHENOL	17-17-321PN-3FT-SIS

37 CONDUCTOR CONNECTOR CABLE LEGEND				
COND #	TYPE	DESCRIPTION OF FUNCTION	COLOR OF COND.	LOCATION
1	DO	PVG PWR TONG	BLACK	TB-TONG # 5
2	DO	REV PIN MAKE, 24 VDC BANG TO PVG	WHITE	TB-TONG # 9
3	DO	REV PIN BREAK, 24 VDC BANG TO PVG	RED	TB-TONG # 11
4	DO	GEAR SHIFT HI, 24 VDC BANG TO PVG	GREEN	TB-TONG # 13
5	DO	GEAR SHIFT LO, 24VDC BANG TO PVG	ORANGE	TB-TONG # 15
6	DO	TONG DOOR OPEN, 24 VDC BANG TO PVG	BLUE	TB-TONG # 17
7	DO	TONG DOOR CLOSED, 24 VDC BANG TO PVG	WH / BK	TB-TONG # 19
8	DO	BACKUP DOOR CLAMP, 24 VDC BANG TO PVG	RD / BK	TB-TONG # 21
9	DO	BACKUP DOOR UNCLAMP, 24 VDC BANG TO PVG	GR / BK	TB-TONG # 23
10	DO	TONG LIFT RAISE, 24 VDC BANG TO PVG	OR / BK	TB-TONG # 25
11	DO	TONG LIFT LOWER, 24 VDC BANG TO PVG	BL / BK	TB-TONG # 27
12	DO	TONG PUSH IN, 24 VDC BANG TO PVG	BK / WH	TB-TONG # 29
13	DO	TONG PUSH OUT, 24 VDC BANG TO PVG	RD / WH	TB-TONG # 31
14	AO	TONG MOTOR, 6-12-18 PROPORTIONAL SIG TO PVG	GR / WH	TB-TONG # 7
15	DO	SIREN OUTPUT, 24 VDC	BL / WH	TB-TONG # 33
16	DO	STROBE OUTPUT, 24VDC	BK/ RD	TB-TONG # 34
17	24 -	24 VDC NEGATIVE TO TONG J-BOX	WH / RD	TB-TONG # 39
18	24 -	24 VDC NEGATIVE TO TONG J-BOX	OR / RD	TB-TONG # 40
19	DI	CAGE PLATE PROX SW # A, 24VDC IN	BL / RD	TB-TONG # 36
20	DI	CAGE PLATE PROX SW # B, 24 VDC IN	RD / GR	TB-TONG # 38
21	DI	BACKUP DOOR PROX SW OPEN, 24 VDC IN	OR / GR	TB-TONG # 2
22	DI	TONG DOOR PROX SW OPEN, 24 VDC IN	BK / WH / RD	TB-TONG # 4
23	24 +	24 VDC POSITIVE TO TONG J-BOX	WH / BK / RD	TB-TONG # 41
24	24 +	24VDC POSITIVE TO TONG J-BOX	RD / BK / WH	TB-TONG # 42
25	-	SPARE	GR / BK / WH	NOT USED
26	-	SPARE	OR / BK / WH	NOT USED
27	-	SPARE	BL / BK / WH	NOT USED
28	-	SPARE	BK / RD / GR	NOT USED
29	-	SPARE	WH / RD / GR	NOT USED
30	-	SPARE	RD / BK / GR	NOT USED
31	-	SPARE	GR / BK / OR	NOT USED
32	-	SPARE	OR / BK / GR	NOT USED
33	-	SPARE	BL / WH / OR	NOT USED
34	-	SPARE	BK / WH / OR	NOT USED
35	-	SPARE	WH / RD / OR	NOT USED
36	-	SPARE	OR / WH / BL	NOT USED
37	-	SPARE	WH / RD / BL	NOT USED

TONG JUNCTION CONTROL PANEL
ELECTRICAL SCHEMATIC

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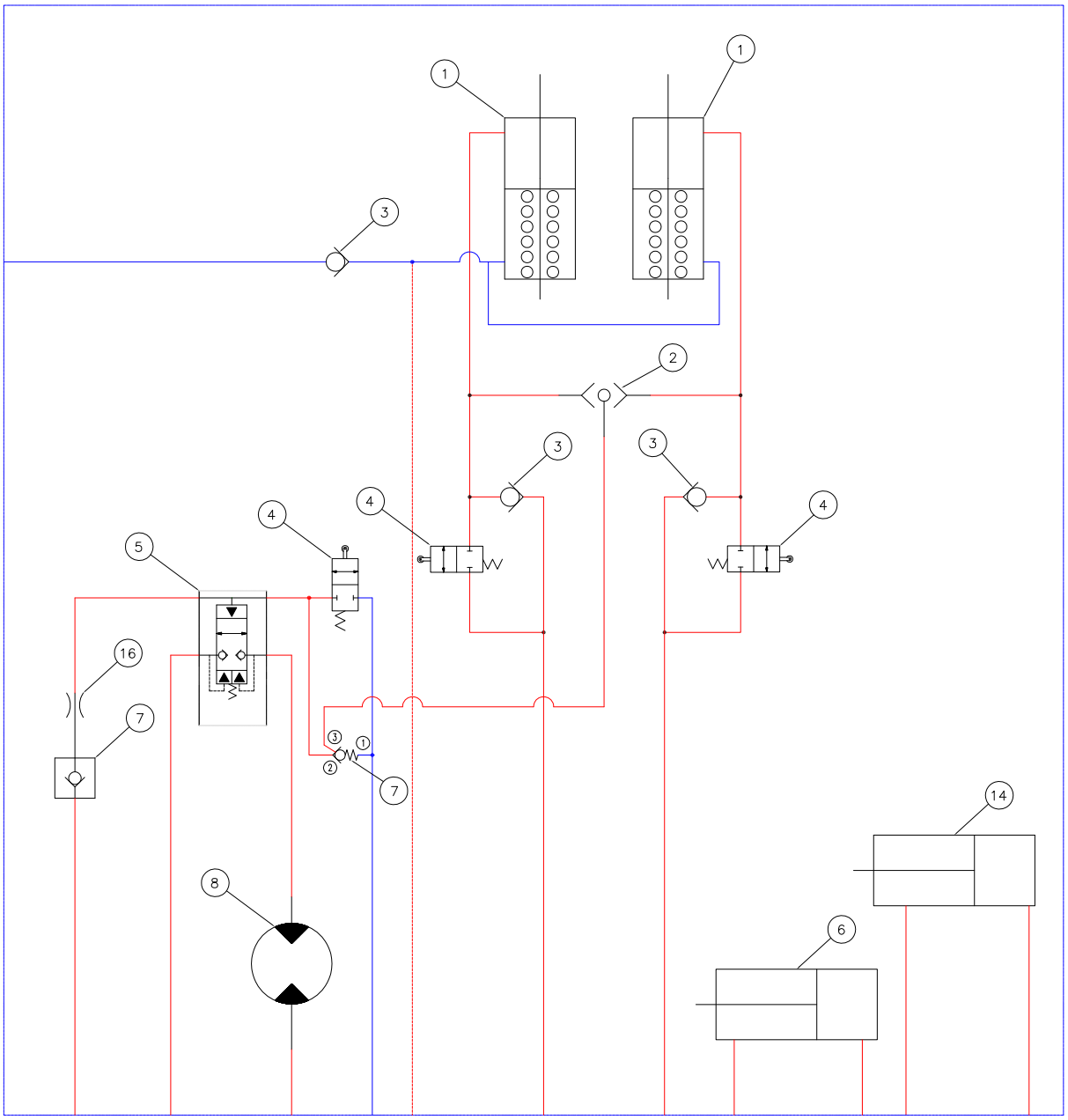
REV. #	LOG #	DATE

ITEM NO.	QTY.	DESCRIPTION	PART NUMBER	MANUFACTURER	LOCATION
1	2	REVERSING PIN CYLINDER	1360601	LYNAIR	TONG
2	1	SHUTTLE VALVE	LSV16TN	HUBER, INC	TONG
3	1	CHECK VALVE, 1/4" NPT	CM4565	PARKER	TONG
4	4	N.C. DOOR SWITCH ASSEMBLY	SLV1000-01	SUPERIOR	TONG/BACKUP
5	1	LOGIC VALVE ASSEMBLY	86049	SUPERIOR	TONG
6	1	AUTO SHIFT CYLINDER	2047	LYNAIR	TONG
7	1	CHECK VALVE, 1/4" NPT	CM4565	PARKER	TONG
8	1	HYDRAULIC MOTOR, SINGLE	14194-01	RINEER	TONG
9	1	LJ MANIFOLD ASSEMBLY	BUCS7699-01	SUPERIOR	BACKUP
10	1	CLAMPING MANIFOLD	B3P0-008	SUPERIOR	TONG
11	1	HYDRAULIC DIRECTIONAL CONTROL VALVE	VP7625-EMRC-S1	SAUER-DANFOSS	TONG
12	1	RELIEF VALVE, PANEL MOUNT	CRSS20009-01	SUN	TONG
13	1	PRESSURE GAUGE, 0-3000 PSI	BAC-3M25RCFF	LENZ	TONG/BACKUP
14	1	REMOTE DOOR CYLINDER	82080-02	LYNAIR	TONG
15	1	DUMP VALVE 1 1/4"	2070	HYDRADYNE	TONG
16	1	ORIFICE'	1449-0	SUPERIOR	TONG



CLE7625UHT-09 REMOTE TONG
HYDRAULIC SCHEMATIC

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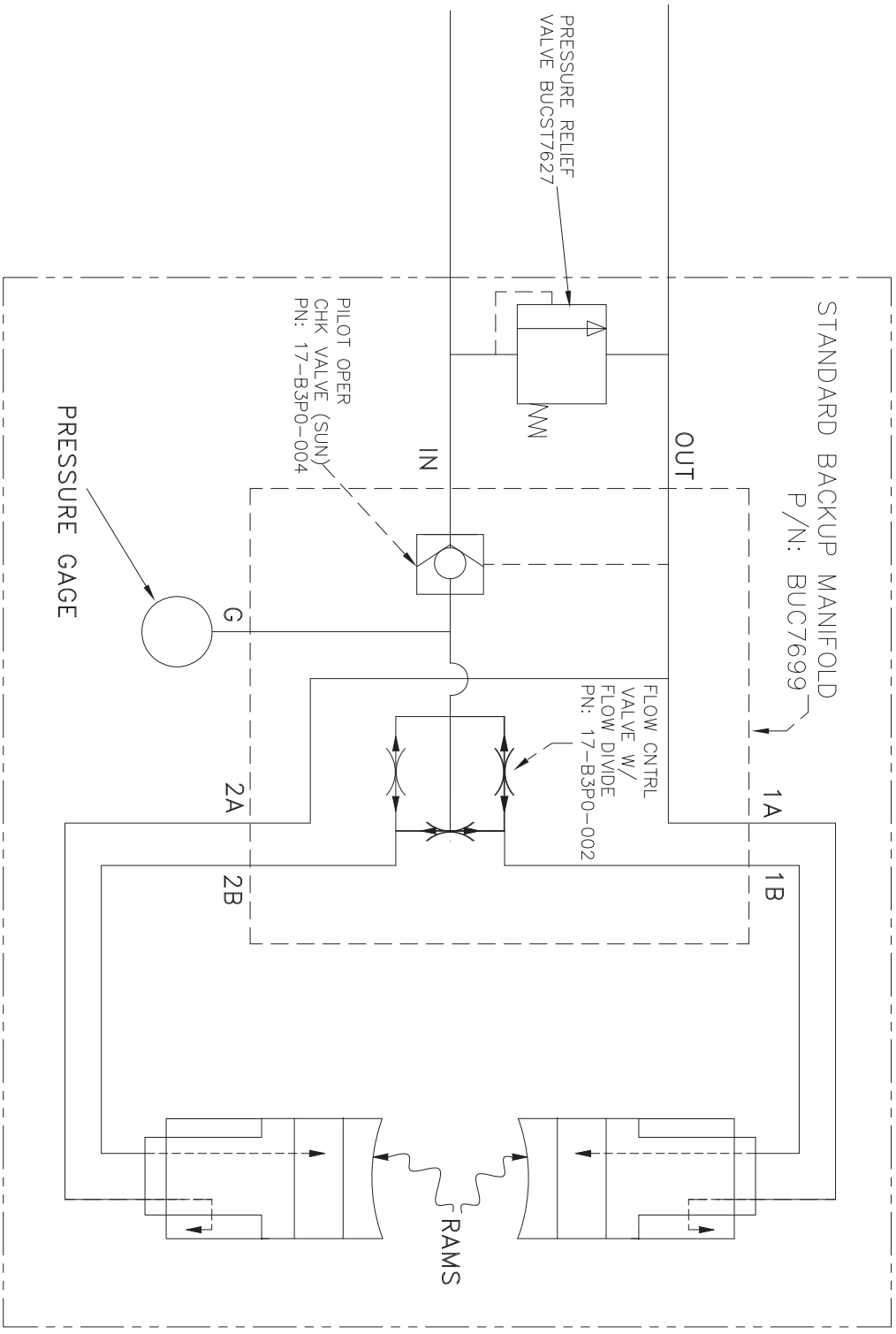

BUCT8625 REMOTE BACKUP
HYDRAULIC SCHEMATIC

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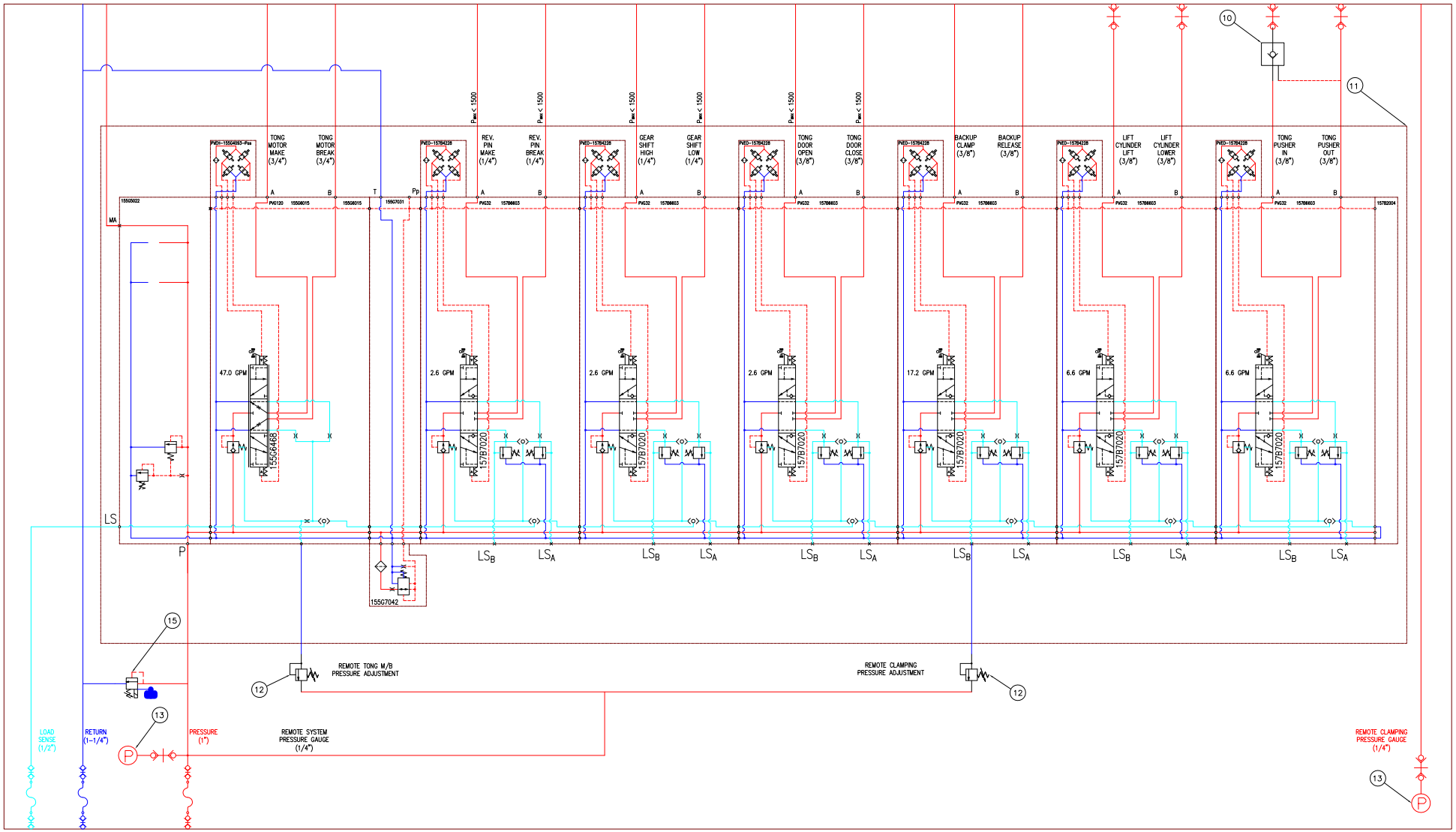

REMOTE TONG & BACKUP VALVE BANK
HYDRAULIC SCHEMATIC

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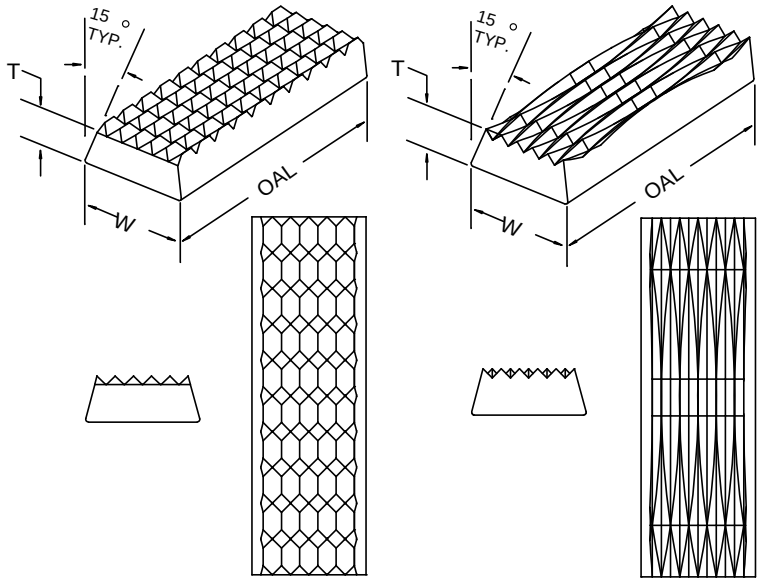
CLINCHER® DIES

Many **CLINCHER®** Tongs and Backups utilize jaws and/or adapters which accept Dovetail Inserts (AKA Pencil Dies or Strip Dies) to effectively grip tubulars. Jaw systems and jaw adapters are also available which accommodate Wrap-Around Fine Tooth Steel Dies, **GRIT FACE™** Dies and Aluminum Dies.

The appropriate jaws, die adapters and dies required for a specific tubular OD are also described in this section of the manual.



STRAIGHT TOOTH **DIAMOND TOOTH**

> ***Note:*** Diamond Tooth Dies are used when a more aggressive bite is required.

Thickness	Width	OAL	P/N Straight Tooth	P/N Diamond Tooth
5/16	5/8	3 1/2	*	*
5/16	5/8	3 7/8	DTI4052	*
5/16	5/8	4 1/2	DTI4002	*
3/8	5/8	3 1/2	DTI4030	*
3/8	5/8	3 7/8	DTI4051	*
3/8	5/8	4 1/2	DTI4001	*

Thickness	Width	OAL	P/N Straight Tooth	P/N Diamond Tooth
17/32	5/8	3 1/2	DTI4031	*
17/32	5/8	3 7/8	DTI4053	*
17/32	5/8	4 1/2	DTI4003	*
5/8	5/8	3 1/2	DTI4032	*
5/8	5/8	3 7/8	DTI4054	*
5/8	5/8	4 1/2	DTI4004	*
11/16	5/8	3 7/8	DTI4055	*
11/16	5/8	4 1/2	DTI4005	*
3/8	1	3 7/8	DTI1505	*
3/8	1 1/4	3 7/8	DTI1614	*
3/8	1 1/4	5	DTI1610	*
7/16	1 1/4	3 7/8	DTI1612	DTI1612D
7/16	1 1/4	5	DTI1617	DTI1617D
1/2	1 1/4	3 7/8	DTI1601	DTI1601D
1/2	1 1/4	5	DTI1602	DTI1602D
9/16	1 1/4	3 7/8	DTI1622	DTI1622D
9/16	1 1/4	5	DTI1623	DTI1623D
5/8	1 1/4	3 7/8	DTI1632	DTI1632D
5/8	1 1/4	5	DTI1633	*
11/16	1 1/4	3 7/8	DTI1642	*
11/16	1 1/4	5	DTI1646	*
3/4	1 1/4	3 7/8	DTI1651	*
3/4	1 1/4	5	DTI1693	*
3/4	1 1/4	5 7/8	DTI1662	DTI1662D
13/16	1 1/4	3 7/8	DTI1661	*
13/16	1 1/4	5	DTI1664	*
7/8	1 1/4	3 7/8	DTI1671	*
7/8	1 1/4	5	DTI1673	*
1	1 1/4	3 7/8	DTI1691	*
1	1 1/4	5	DTI1697	*

* Available upon request.

CLINCHER® WRAP AROUND DIES

CLINCHER® Wrap Around Dies are available in three types:

Fine Toothed Steel Dies:	for low to ultra high torque applications on carbon steel tubulars including tubing, casing, and drill pipe
Smooth Faced Aluminum Dies:	for low to moderate torque applications on fiberglass and corrosion resistant alloy (stainless steel) tubulars
GRIT FACE™ Dies:	for low to high torque applications on fiberglass and corrosion resistant alloy (stainless steel) tubulars where the use of steel dies is prohibited as well as on carbon steel tubulars where reduced marking is desired

CLINCHER® Dies are designed to match the OD of the tubing, casing, coupling, or accessory being made up or broken out. Each die is stamped on the top or side to identify its size. Using Fine Toothed Steel Dies which are slightly larger than the tubular is acceptable provided the difference in diameters is less than 3/32" (0.093"). Aluminum and **GRIT FACE™** Dies should be matched with the specific tubular diameters required. **Note:** The use of improperly sized dies can result in reduced torque capacity, increased pipe marking, and reduced die life.

CAUTION: Do not attempt to grip tubular diameters which are larger than the dies being used. Failure to observe this precaution can result in damage to the tubular or tong jaws.

In emergencies where correct die sizes are unavailable, some operators have successfully used two different sizes of dies to accommodate unusual, nonstandard diameters.

CLINCHER® Wrap Around Dies are manufactured in specific diameters to match standard tubing and casing diameters, API coupling diameters, selected work string connection diameters and certain commonly used premium connection coupling diameters. **CLINCHER®** Wrap Around Dies should not be used on tubulars which are larger than the nominal die size. Steel Toothed Dies can be used on tubulars which are no smaller than 3/32" (0.093") less than the nominal die size. Aluminum and **GRIT FACE™** Dies should be matched with the specific tubular diameters required.

Note: Fine Toothed Steel Dies are normally stocked in our Broussard, Louisiana facility. A partial listing of commonly manufactured sizes is shown below. Aluminum and **GRIT FACE™** Dies are normally made to order although a limited range of sizes and small quantities may be available from stock. Contact SUPERIOR Manufacturing & Hydraulics for information concerning availability of stock and special die sizes.

CLINCHER® WRAP AROUND DIES

DIE Nomenclature for CLE7625 UHT Tong and BUC7625 or BUC8625 UHT Backup

BUC4500-xxxx Fine Toothed Steel dies for jaws (2 reqd per tong) (Jaw CJ-76A)
CLE7625-xxxx Fine Toothed Steel dies for jaws (2 reqd per tong)) (Jaw CJ-76B)
BUC7625-xxxx Fine Toothed Steel dies for jaws (2 reqd per tong) (Jaw CJ-76B)
BUC8625-xxxx Fine Toothed Steel dies for jaws (3 reqd per backup)

BUCA4500-xxxx Aluminum dies for jaws (2 reqd per tong) (Jaw CJ-LF-76A)
BUCA7625-xxxx Aluminum dies for jaws (2 reqd per tong) (Jaw CJ-LF-76B)
BUCA8625-xxxx Aluminum dies for jaws (3 reqd per backup)

BB4500-xxxx **GRIT FACE™** dies for jaws (2 reqd per tong) (Jaw CJ-76A or CJ-LF-76A)
BB7625-xxxx **GRIT FACE™** dies for jaws (2 reqd per tong) (Jaw CJ-LF-76B)
BB8625-xxxx **GRIT FACE™** dies for jaws (3 reqd per backup)

ORDERING EXAMPLE: fine toothed steel dies are needed to run 2 7/8" OD tubing
Qty. two (2) BUC4500-2875 dies for jaws
Qty. three (3) BUC8625-2875 dies for jaws
(replace xxxx with size required in inches)

BUC4500-xxxx: Fine Toothed steel dies for UHT Tong
1.660 1.900 2.062 2.162 2.230 2.375 2.600 2.697 2.723 2.750 2.875 3.000 3.062
3.063 3.125 3.230 3.250 3.275 3.297 3.375 3.437 3.500 3.668 3.750 3.830 3.875
3.900 3.965 4.000 4.053 4.062 4.125 4.187 4.250 4.375 4.500

CLE7625-xxxx: Fine Toothed steel dies for UHT Tong
7.000 7.625

BUC7625-xxxx: Fine Toothed steel dies for 7 5/8" UHT Backup
2.375 2.600 2.700 2.707 2.875 3.000 3.062 3.125 3.230 3.240 3.250 3.375 3.400
3.500 3.625 3.668 3.750 3.862 3.875 3.886 3.900 3.910 3.941 4.000 4.025 4.053
4.125 4.250 4.375 4.460 4.500 4.505 4.530 4.625 4.750 4.767 4.862 4.875 4.892
4.900 4.921 4.935 4.961 5.000 5.005 5.125 5.137 5.150 5.215 5.250 5.290 5.313
5.439 5.470 5.500 5.530 5.563 5.570 5.587 5.620 5.695 5.750 5.780 5.826 5.866
5.875 5.931 6.000 6.035 6.050 6.051 6.075 6.100 6.125 6.150 6.250 6.260 6.325
6.350 6.375 6.400 6.500 6.625 6.650 6.750 6.875 7.000 7.020 7.191 7.250 7.350
7.375 7.380 7.390 7.400 7.413 7.500 7.625 7.656 7.681 7.732 7.750 7.790

BUC8625-xxxx: Fine Toothed steel dies for 8 5/8" UHT Backup
2.375 2.875 3.125 3.375 3.500 3.750 3.900 4.000 4.250 4.500 4.750 4.862 4.875
4.961 5.000 5.042 5.125 5.250 5.313 5.500 5.587 5.750 5.875 6.000 6.050 6.075
6.125 6.150 6.250 6.375 6.500 6.625 6.750 7.000 7.375 7.390 7.500 7.625 7.656
7.680 7.681 7.750 7.693 7.717 7.723 7.750 8.000 8.125 8.250 8.280 8.500 8.625

CLINCHER® WRAP AROUND DIES

BUCA7625-xxxx: Aluminum dies for 7 5/8" UHT Tong and 7 5/8" UHT Backup
1.900 2.250 2.375 2.400 2.679 2.707 2.735 2.776 2.875 2.910 3.062 3.125 3.130
3.230 2.240 3.300 3.327 3.375 3.400 3.500 3.523 3.590 3.875 3.900 3.950 4.000
4.050 4.053 4.069 4.138 4.200 4.250 4.313 4.375 4.460 4.500 4.600 4.620 4.862
4.968 5.000 5.012 5.150 5.181 5.250 5.350 5.500 5.550 5.563 5.577 5.590 5.650
5.653 5.700 5.750 5.870 5.890 5.960 6.000 6.025 6.050 6.051 6.071 6.075 6.100
6.125 6.135 6.150 6.153 6.156 6.170 6.200 6.250 6.400 6.500 6.625 6.750 6.940
7.000 7.250 7.390 7.430 7.440 7.579 7.625 7.656 7.675 7.681 7.700 7.750

BUCA8625-xxxx: Aluminum dies for 8 5/8" UHT Backup
2.375 2.700 2.875 3.297 3.500 3.890 4.000 4.250 4.500 4.875 5.000 5.010 5.150
5.250 5.500 5.563 5.590 5.600 5.653 5.750 6.000 6.050 6.075 6.135 6.150 6.200
6.375 6.500 6.625 7.000 7.063 7.430 7.625 7.644 7.681 7.923

BB7625-xxxx: **GRIT FACE™** dies for 7 5/8" UHT Tong and 7 5/8" UHT Backup
2.375 2.875 3.250 3.500 3.878 3.900 4.000 4.053 4.250 4.500 4.750 4.901 4.950
5.000 5.200 5.500 5.563 5.577 5.736 5.890 6.000 6.045 6.050 6.051 6.075 6.079
6.100 6.150 6.180 6.240 6.248 6.500 6.625 6.750 7.000 7.020 7.191 7.290 7.390
7.413 7.625 7.644 7.681 7.700 7.720 7.731 7.772 7.790 7.852

BB8625-xxxx: **GRIT FACE™** dies for 8 5/8" UHT Backup
2.375 2.875 3.250 3.500 3.890 3.950 4.000 4.250 4.500 4.875 4.921 4.961 5.000
5.016 5.042 5.122 5.200 5.201 5.500 5.587 6.000 6.050 6.075 6.150 6.248 6.500
6.625 7.000 7.625 7.644 7.681 8.750

Contact SUPERIOR Manufacturing & Hydraulics for information concerning availability of stock and special die sizes.

Gripping range, jaw, adapters and dovetail die inserts for CLINCHER® 7 5/8 UHT Tong and 7 5/8 UHT Backup

Nominal Jaw and Dovetail Die Adapter Size	Jaw Assembly Part Number **Manuf. Before 11/19/07** assembly consists of two jaws c/w pins, rollers, dovetail dies and die retainers	dovetail jaw part number **Manuf. Before 11/19/07**	dovetail die adapter part number 3 dovetail die adapters required to dress backup	nominal jaw size	Jaw gripping range when dressed with1 1/4" wide xx.xx" long dovetail strip dies with thickness of:							
					0.8125	0.75	0.6875	0.625	0.5625	**0.5**	0.4375	<<*dovetail die thickness*
					undersized (use this size for emergencies only)	undersized	undersized	undersized	undersized	**STANDARD**	oversized (use this size for emergencies only)	<<*pipe application*
7 5/8 x 2 7/8	CJDT76X02875	Left 76X2875L	BUDT76-xxxxx	2.875	2.250	2.375	2.500	2.625	2.750	**2.875**	3.000	maximum pipe OD for die & jaw
		Rt. 76X2875R			*1.750*	*1.875*	*2.000*	*2.125*	*2.250*	***2.375***	*2.500*	*minimum undersized condition*
7 5/8 x 3 1/8	CJDT76X03125	Left 76X3125L	BUDT76-xxxxx	3.125	2.500	2.625	2.750	2.875	3.000	**3.125**	3.250	maximum pipe OD for die & jaw
		Rt. 76X3125R			*2.000*	*2.125*	*2.250*	*2.375*	*2.500*	***2.625***	*2.750*	*minimum undersized condition*
7 5/8 x 3 3/8	CJDT76X03375	Left 76X3375L	BUDT76-xxxxx	3.375	2.750	2.875	3.000	3.125	3.250	**3.375**	3.500	maximum pipe OD for die & jaw
		Rt. 76X3375R			*2.250*	*2.375*	*2.500*	*2.625*	*2.750*	***2.875***	*3.000*	*minimum undersized condition*
7 5/8 x 3 1/2	CJDT76X03500	Left 76X3500L	BUDT76-03500	3.500	2.875	3.000	3.125	3.250	3.375	**3.500**	3.625	maximum pipe OD for die & jaw
		Rt. 76X3500R			*2.375*	*2.500*	*2.625*	*2.750*	*2.875*	***3.000***	*3.125*	*minimum undersized condition*
7 5/8 x 4	CJDT76X04000	Left 76X4000L	BUDT76-xxxxx	4.000	3.375	3.500	3.625	3.750	3.875	**4.000**	4.125	maximum pipe OD for die & jaw
		Rt. 76X4000R			*2.875*	*3.000*	*3.125*	*3.250*	*3.375*	***3.500***	*3.625*	*minimum undersized condition*
7 5/8 x 4 1/2	CJDT76X04500	Left 76X4500L	BUDT76-04500	4.500	3.875	4.000	4.125	4.250	4.375	**4.500**	4.625	maximum pipe OD for die & jaw
		Rt. 76X4500R			*3.375*	*3.500*	*3.625*	*3.750*	*3.875*	***4.000***	*4.125*	*minimum undersized condition*
7 5/8 x 4 3/4	CJDT76Xxxxxx	Left xxxxx	BUDT76-04750	4.750	4.125	4.250	4.375	4.500	4.625	**4.750**	4.875	maximum pipe OD for die & jaw
		Rt. xxxxx			*3.625*	*3.750*	*3.875*	*4.000*	*4.125*	***4.250***	*4.375*	*minimum undersized condition*
7 5/8 x 5	CJDT76X05000	Left 76X5000L	BUDT76-05000	5.000	4.375	4.500	4.625	4.750	4.875	**5.000**	5.125	maximum pipe OD for die & jaw
		Rt. 76X5000R			*3.875*	*4.000*	*4.125*	*4.250*	*4.375*	***4.500***	*4.625*	*minimum undersized condition*
7 5/8 x 5 1/2	CJDT76X05500	Left 76X5500L	BUDT76-05500	5.500	4.875	5.000	5.125	5.250	5.375	**5.500**	5.625	maximum pipe OD for die & jaw
		Rt. 76X5500R			*4.375*	*4.500*	*4.625*	*4.750*	*4.875*	***5.000***	*5.125*	*minimum undersized condition*
7 5/8 x 6	CJDT76X06000	Left 76X6000L	BUDT76-xxxxx	6.000	5.375	5.500	5.625	5.750	5.875	**6.000**	6.125	maximum pipe OD for die & jaw
		Rt. 76X6000R			*4.875*	*5.000*	*5.125*	*5.250*	*5.375*	***5.500***	*5.625*	*minimum undersized condition*
7 5/8 x 6 5/8	CJDT76X06625	Left 76X6625L	BUDT76-xxxxx	6.625	6.000	6.125	6.250	6.375	6.500	**6.625**	6.750	maximum pipe OD for die & jaw
		Rt. 76X6625R			*5.500*	*5.625*	*5.750*	*5.875*	*6.000*	***6.125***	*6.250*	*minimum undersized condition*
7 5/8 x 7	CJDT76X07000	Left 76X7000L	BUDT76-07000	7.000	6.375	6.500	6.625	6.750	6.875	**7.000**	7.125	maximum pipe OD for die & jaw
		Rt. 76X7000R			*5.875*	*6.000*	*6.125*	*6.250*	*6.375*	***6.500***	*6.625*	*minimum undersized condition*
7 5/8 x 7 5/8	CJDT76X07625	Left 76212-7625L	BUDT76-xxxxx	7.625	7.000	7.125	7.250	7.375	7.500	**7.625**	7.750	maximum pipe OD for die & jaw
		Rt. 76212-7625R			*6.500*	*6.625*	*6.750*	*6.875*	*7.000*	***7.125***	*7.250*	*minimum undersized condition*

Gripping range, jaw, adapters and dovetail die inserts for CLINCHER® 7 5/8 UHT Tong and 7 5/8 UHT Backup

Nominal Jaw and Dovetail Die Adapter Size	Jaw Assembly Part Number **Manuf. Before 11/19/07** assembly consists of two jaws c/w pins, rollers, dovetail dies and die retainers	dovetail jaw part number **Manuf. Before 11/19/07**	dovetail die adapter part number 3 dovetail die adapters required to dress backup	nominal jaw size	Jaw gripping range when dressed with1 1/4" wide xx.xx" long dovetail strip dies with thickness of:							
					0.8125	0.75	0.6875	0.625	0.5625	**0.5**	0.4375	<<*dovetail die thickness*
					undersized (use this size for emergencies only)	undersized	undersized	undersized	undersized	**STANDARD**	oversized (use this size for emergencies only)	<<*pipe application*
***CLINCHER®** part number for 1 1/4" wide x 3 7/8" long straight toothed dovetail die inserts used in dovetail die adapters (2 pcs required per adapter or 6 pcs required per set of 3 adapters>>*					DTI1661	DTI1651	DTI1642	DTI1632	DTI1622	**DTI1601**	DTI1612	
***CLINCHER®** part number for 1 1/4" wide x 3 7/8" long diamond toothed dovetail die inserts used in dovetail die adapters (2 pcs required per adapter or 6 pcs required per set of 3 adapters>>*					upon request	upon request	upon request	DTI1632D	DTI1622D	**DTI1601D**	DTI1612D	
***CLINCHER®** part number for 1 1/4" wide x 5" long straight toothed dovetail die inserts used in dovetail jaw assembly (2 pcs required per jaw or 4 pcs required per jaw assembly>>*					DTI1664	DTI1693	DTI1646	DTI1633	DTI1623	**DTI1602**	DTI1617	
***CLINCHER®** part number for 1 1/4" wide x 5" long diamond toothed dovetail die inserts used in dovetail jaw assembly (2 pcs required per jaw or 4 pcs required per jaw assembly>>*					upon request	upon request	upon request	upon request	DTI1623D	**DTI1602D**	DTI1617D	

Note 1: All CJDT76X series of jaws may be used in CLE7625 UHT tongs.
Note 2: xxxxx indicates this size has not been designed at this time, but is available upon request.

Gripping range, jaw, adapters and dovetail die inserts for CLINCHER® 7 5/8 UHT Tong and 7 5/8 UHT Backup

Nominal Jaw and Dovetail Die Adapter Size	Jaw Assembly Part Number **Manuf. After 11/19/07** assembly consists of two jaws c/w pins, rollers, dovetail dies and die retainers	dovetail jaw part number **Manuf. After 11/19/07**	dovetail die adapter part number 3 dovetail die adapters required to dress backup	nominal jaw size	Jaw gripping range when dressed with1 1/4" wide xx.xx" long dovetail strip dies with thickness of: 0.8125 undersized (use this size for emergencies only)	0.75 undersized	0.6875 undersized	0.625 undersized	0.5625 undersized	**0.5 STANDARD**	0.4375 oversized (use this size for emergencies only)	<<*dovetail die thickness* <<*pipe application*
7 5/8 x 2 3/8	CJDTLF78X02375	Left 78X2375L	BUDT76-xxxxx	2.375	1.750	1.875	2.000	2.125	2.250	**2.375**	2.500	maximum pipe OD for die & jaw
		Rt. 78X2375R			*1.250*	*1.375*	*1.500*	*1.625*	*1.750*	***1.875***	*2.000*	*minimum undersized condition*
7 5/8 x 2 7/8	CJDTLF78X02875	Left 78X2875L	BUDT76-xxxxx	2.875	2.250	2.375	2.500	2.625	2.750	**2.875**	3.000	maximum pipe OD for die & jaw
		Rt. 78X2875R			*1.750*	*1.875*	*2.000*	*2.125*	*2.250*	***2.375***	*2.500*	*minimum undersized condition*
7 5/8 x 3 1/8	CJDTLF78X03125	Left 78X3125L	BUDT76-xxxxx	3.125	2.500	2.625	2.750	2.875	3.000	**3.125**	3.250	maximum pipe OD for die & jaw
		Rt. 78X3125R			*2.000*	*2.125*	*2.250*	*2.375*	*2.500*	***2.625***	*2.750*	*minimum undersized condition*
7 5/8 x 3 3/8	CJDTLF78X03375	Left 78X3375L	BUDT76-xxxxx	3.375	2.750	2.875	3.000	3.125	3.250	**3.375**	3.500	maximum pipe OD for die & jaw
		Rt. 78X3375R			*2.250*	*2.375*	*2.500*	*2.625*	*2.750*	***2.875***	*3.000*	*minimum undersized condition*
7 5/8 x 3 1/2	CJDTLF78X03500	Left 78X3500L	BUDT76-03500	3.500	2.875	3.000	3.125	3.250	3.375	**3.500**	3.625	maximum pipe OD for die & jaw
		Rt. 78X3500R			*2.375*	*2.500*	*2.625*	*2.750*	*2.875*	***3.000***	*3.125*	*minimum undersized condition*
7 5/8 x 4	CJDT78X04000	Left 78X4000L	BUDT76-xxxxx	4.000	3.375	3.500	3.625	3.750	3.875	**4.000**	4.125	maximum pipe OD for die & jaw
		Rt. 78X4000R			*2.875*	*3.000*	*3.125*	*3.250*	*3.375*	***3.500***	*3.625*	*minimum undersized condition*
7 5/8 x 4 1/2	CJDT78X04500	Left 78X4500L	BUDT76-04500	4.500	3.875	4.000	4.125	4.250	4.375	**4.500**	4.625	maximum pipe OD for die & jaw
		Rt. 78X4500R			*3.375*	*3.500*	*3.625*	*3.750*	*3.875*	***4.000***	*4.125*	*minimum undersized condition*
7 5/8 x 4 3/4	CJDT78Xxxxxx	Left xxxxx	BUDT76-04750	4.750	4.125	4.250	4.375	4.500	4.625	**4.750**	4.875	maximum pipe OD for die & jaw
		Rt. xxxxx			*3.625*	*3.750*	*3.875*	*4.000*	*4.125*	***4.250***	*4.375*	*minimum undersized condition*
7 5/8 x 5	CJDT78X05000	Left 78X5000L	BUDT76-05000	5.000	4.375	4.500	4.625	4.750	4.875	**5.000**	5.125	maximum pipe OD for die & jaw
		Rt. 78X5000R			*3.875*	*4.000*	*4.125*	*4.250*	*4.375*	***4.500***	*4.625*	*minimum undersized condition*
7 5/8 x 5 1/2	CJDT78X05500	Left 78X5500L	BUDT76-05500	5.500	4.875	5.000	5.125	5.250	5.375	**5.500**	5.625	maximum pipe OD for die & jaw
		Rt. 78X5500R			*4.375*	*4.500*	*4.625*	*4.750*	*4.875*	***5.000***	*5.125*	*minimum undersized condition*
7 5/8 x 6	CJDT78X06000	Left 78X6000L	BUDT76-xxxxx	6.000	5.375	5.500	5.625	5.750	5.875	**6.000**	6.125	maximum pipe OD for die & jaw
		Rt. 78X6000R			*4.875*	*5.000*	*5.125*	*5.250*	*5.375*	***5.500***	*5.625*	*minimum undersized condition*
7 5/8 x 6 5/8	CJDT76X06625	Left 76X6625L	BUDT76-xxxxx	6.625	6.000	6.125	6.250	6.375	6.500	**6.625**	6.750	maximum pipe OD for die & jaw
		Rt. 76X6625R			*5.500*	*5.625*	*5.750*	*5.875*	*6.000*	***6.125***	*6.250*	*minimum undersized condition*
7 5/8 x 7	CJDT76X07000	Left 76X7000L	BUDT76-07000	7.000	6.375	6.500	6.625	6.750	6.875	**7.000**	7.125	maximum pipe OD for die & jaw
		Rt. 76X7000R			*5.875*	*6.000*	*6.125*	*6.250*	*6.375*	***6.500***	*6.625*	*minimum undersized condition*
7 5/8 x 7 5/8	CJDT76X07625	Left 76212-7625L	BUDT76-xxxxx	7.625	7.000	7.125	7.250	7.375	7.500	**7.625**	7.750	maximum pipe OD for die & jaw
		Rt. 76212-7625R			*6.500*	*6.625*	*6.750*	*6.875*	*7.000*	***7.125***	*7.250*	*minimum undersized condition*

Gripping range, jaw, adapters and dovetail die inserts for CLINCHER® 7 5/8 UHT Tong and 7 5/8 UHT Backup

Nominal Jaw and Dovetail Die Adapter Size	Jaw Assembly Part Number **Manuf. After 11/19/07** assembly consists of two jaws c/w pins, rollers, dovetail dies and die retainers	dovetail jaw part number **Manuf. After 11/19/07**	dovetail die adapter part number 3 dovetail die adapters required to dress backup	nominal jaw size	Jaw gripping range when dressed with1 1/4" wide xx.xx" long dovetail strip dies with thickness of:							
					0.8125	0.75	0.6875	0.625	0.5625	**0.5**	0.4375	<<*dovetail die thickness*
					undersized (use this size for emergencies only)	undersized	undersized	undersized	undersized	**STANDARD**	oversized (use this size for emergencies only)	<<*pipe application*
***CLINCHER®** part number for 1 1/4" wide x 3 7/8" long straight toothed dovetail die inserts used in dovetail die adapters (2 pcs required per adapter or 6 pcs required per set of 3 adapters>>*					DTI1661	DTI1651	DTI1642	DTI1632	DTI1622	**DTI1601**	DTI1612	
***CLINCHER®** part number for 1 1/4" wide x 3 7/8" long diamond toothed dovetail die inserts used in dovetail die adapters (2 pcs required per adapter or 6 pcs required per set of 3 adapters>>*					upon request	upon request	upon request	DTI1632D	DTI1622D	**DTI1601D**	DTI1612D	
***CLINCHER®** part number for 1 1/4" wide x 5" long straight toothed dovetail die inserts used in dovetail jaw assembly (2 pcs required per jaw or 4 pcs required per jaw assembly>>*					DTI1664	DTI1693	DTI1646	DTI1633	DTI1623	**DTI1602**	DTI1617	
***CLINCHER®** part number for 1 1/4" wide x 5" long diamond toothed dovetail die inserts used in dovetail jaw assembly (2 pcs required per jaw or 4 pcs required per jaw assembly>>*					upon request	upon request	upon request	upon request	DTI1623D	**DTI1602D**	DTI1617D	

Note 1: All CJDT76X series of jaws may be used in CLE7625 UHT tongs.
Note 2: xxxxx indicates this size has not been designed at this time, but is available upon request.

Gripping range, jaw, adapters and dovetail die inserts for CLINCHER® 7 5/8 UHT Tong and 8 5/8 UHT Backup

Nominal Jaw and Dovetail Die Adapter Size	Jaw Assembly Part Number **Manuf. Before 11/19/07** assembly consists of two jaws c/w pins, rollers, dovetail dies and die retainers	dovetail jaw part number **Manuf. Before 11/19/07**	dovetail die adapter part number 3 dovetail die adapters required to dress backup	nominal jaw size	Jaw gripping range when dressed with1 1/4" wide xx.xx" long dovetail strip dies with thickness of: 0.8125 undersized (use this size for emergencies only)	0.75 undersized	0.6875 undersized	0.625 undersized	0.5625 undersized	**0.5 STANDARD**	0.4375 oversized (use this size for emergencies only)	<<*dovetail die thickness* <<*pipe application*
7 5/8 x 2 7/8	CJDT76X02875	Left 76X2875L	BUDT86-02875	2.875	7.750	7.875	8.000	8.125	8.250	**8.375**	8.500	maximum pipe OD for die & jaw
		Rt. 76X2875R			*2.250*	*2.375*	*2.500*	*2.625*	*2.750*	***2.875***	*3.000*	*minimum undersized condition*
7 5/8 x 3 1/8	CJDT76X03125	Left 76X3125L	BUDT86-03125	3.125	2.500	2.625	2.750	2.875	3.000	**3.125**	3.250	maximum pipe OD for die & jaw
		Rt. 76X3125R			*2.000*	*2.125*	*2.250*	*2.375*	*2.500*	***2.625***	*2.750*	*minimum undersized condition*
7 5/8 x 3 3/8	CJDT76X03375	Left 76X3375L	BUDT86-03375	3.375	2.750	2.875	3.000	3.125	3.250	**3.375**	3.500	maximum pipe OD for die & jaw
		Rt. 76X3375R			*2.250*	*2.375*	*2.500*	*2.625*	*2.750*	***2.875***	*3.000*	*minimum undersized condition*
7 5/8 x 3 1/2	CJDT76X03500	Left 76X3500L	BUDT86-03500	3.500	2.875	3.000	3.125	3.250	3.375	**3.500**	3.625	maximum pipe OD for die & jaw
		Rt. 76X3500R			*2.375*	*2.500*	*2.625*	*2.750*	*2.875*	***3.000***	*3.125*	*minimum undersized condition*
7 5/8 x 4	CJDT76X04000	Left 76X4000L	BUDT86-xxxxx	4.000	8.875	9.000	9.125	9.250	9.375	**9.500**	9.625	maximum pipe OD for die & jaw
		Rt. 76X4000R			*3.375*	*3.500*	*3.625*	*3.750*	*3.875*	***4.000***	*4.125*	*minimum undersized condition*
7 5/8 x 4 1/8	CJDT76Xxxxxx	Left xxxxx	BUDT86-04125	4.125	3.500	3.625	3.750	3.875	4.000	**4.125**	4.250	maximum pipe OD for die & jaw
		Rt. xxxxx			*3.000*	*3.125*	*3.250*	*3.375*	*3.500*	***3.625***	*3.750*	*minimum undersized condition*
7 5/8 x 4 1/2	CJDT76X04500	Left 76X4500L	BUDT86-04500	4.500	3.875	4.000	4.125	4.250	4.375	**4.500**	4.625	maximum pipe OD for die & jaw
		Rt. 76X4500R			*3.375*	*3.500*	*3.625*	*3.750*	*3.875*	***4.000***	*4.125*	*minimum undersized condition*
7 5/8 x 4 5/8	CJDT76Xxxxxx	Left xxxxx	BUDT86-04625	4.625	4.000	4.125	4.250	4.375	4.500	**4.625**	4.750	maximum pipe OD for die & jaw
		Rt. xxxxx			*3.500*	*3.625*	*3.750*	*3.875*	*4.000*	***4.125***	*4.250*	*minimum undersized condition*
7 5/8 x 4 3/4	CJDT76Xxxxxx	Left xxxxx	BUDT86-04750	4.750	4.125	4.250	4.375	4.500	4.625	**4.750**	4.875	maximum pipe OD for die & jaw
		Rt. xxxxx			*3.625*	*3.750*	*3.875*	*4.000*	*4.125*	***4.250***	*4.375*	*minimum undersized condition*
7 5/8 x 5	CJDT76X05000	Left 76X5000L	BUDT86-05000	5.000	4.375	4.500	4.625	4.750	4.875	**5.000**	5.125	maximum pipe OD for die & jaw
		Rt. 76X5000R			*3.875*	*4.000*	*4.125*	*4.250*	*4.375*	***4.500***	*4.625*	*minimum undersized condition*
7 5/8 x 5 1/4	CJDT76Xxxxxx	Left xxxxx	BUDT86-05250	5.250	4.625	4.750	4.875	5.000	5.125	**5.250**	5.375	maximum pipe OD for die & jaw
		Rt. xxxxx			*4.125*	*4.250*	*4.375*	*4.500*	*4.625*	***4.750***	*4.875*	*minimum undersized condition*
7 5/8 x 5 1/2	CJDT76X05500	Left 76X5500L	BUDT86-05500	5.500	4.875	5.000	5.125	5.250	5.375	**5.500**	5.625	maximum pipe OD for die & jaw
		Rt. 76X5500R			*4.375*	*4.500*	*4.625*	*4.750*	*4.875*	***5.000***	*5.125*	*minimum undersized condition*

Gripping range, jaw, adapters and dovetail die inserts for CLINCHER® 7 5/8 UHT Tong and 8 5/8 UHT Backup

Nominal Jaw and Dovetail Die Adapter Size	Jaw Assembly Part Number **Manuf. Before 11/19/07** assembly consists of two jaws c/w pins, rollers, dovetail dies and die retainers	dovetail jaw part number **Manuf. Before 11/19/07**	dovetail die adapter part number 3 dovetail die adapters required to dress backup	nominal jaw size	Jaw gripping range when dressed with1 1/4" wide xx.xx" long dovetail strip dies with thickness of: 0.8125 undersized (use this size for emergencies only)	0.75 undersized	0.6875 undersized	0.625 undersized	0.5625 undersized	**0.5 STANDARD**	0.4375 oversized (use this size for emergencies only)	<<*dovetail die thickness* <<*pipe application*
7 5/8 x 6	CJDT76X06000	Left 76X6000L	BUDT86-xxxxx	6.000	10.750	10.875	11.000	11.125	11.250	**11.375**	11.500	maximum pipe OD for die & jaw
		Rt. 76X6000R			*5.375*	*5.500*	*5.625*	*5.750*	*5.875*	***6.000***	*6.125*	*minimum undersized condition*
7 5/8 x 6 1/4	CJDT76Xxxxxx	Left xxxxx	BUDT86-06250	6.250	5.625	5.750	5.875	6.000	6.125	**6.250**	6.375	maximum pipe OD for die & jaw
		Rt. xxxxx			*5.125*	*5.250*	*5.375*	*5.500*	*5.625*	***5.750***	*5.875*	*minimum undersized condition*
7 5/8 x 6 3/8	CJDT76Xxxxxx	Left xxxxx	BUDT86-06375	6.375	5.750	5.875	6.000	6.125	6.250	**6.375**	6.500	maximum pipe OD for die & jaw
		Rt. xxxxx			*5.250*	*5.375*	*5.500*	*5.625*	*5.750*	***5.875***	*6.000*	*minimum undersized condition*
7 5/8 x 6 1/2	CJDT76Xxxxxx	Left xxxxx	BUDT86-06500	6.500	5.875	6.000	6.125	6.250	6.375	**6.500**	6.625	maximum pipe OD for die & jaw
		Rt. xxxxx			*5.375*	*5.500*	*5.625*	*5.750*	*5.875*	***6.000***	*6.125*	*minimum undersized condition*
7 5/8 x 6 5/8	CJDT76X06625	Left 76X6625L	BUDT86-06625	6.625	6.000	6.125	6.250	6.375	6.500	**6.625**	6.750	maximum pipe OD for die & jaw
		Rt. 76X6625R			*5.500*	*5.625*	*5.750*	*5.875*	*6.000*	***6.125***	*6.250*	*minimum undersized condition*
7 5/8 x 7	CJDT76X07000	Left 76X7000L	BUDT86-07000	7.000	6.375	6.500	6.625	6.750	6.875	**7.000**	7.125	maximum pipe OD for die & jaw
		Rt. 76X7000R			*5.875*	*6.000*	*6.125*	*6.250*	*6.375*	***6.500***	*6.625*	*minimum undersized condition*
7 5/8 x 7 1/4	CJDT76Xxxxxx	Left xxxxx	BUDT86-07250	7.250	6.625	6.750	6.875	7.000	7.125	**7.250**	7.375	maximum pipe OD for die & jaw
		Rt. xxxxx			*6.125*	*6.250*	*6.375*	*6.500*	*6.625*	***6.750***	*6.875*	*minimum undersized condition*
7 5/8 x 7 1/2	CJDT76Xxxxxx	Left xxxxx	BUDT86-07500	7.500	6.875	7.000	7.125	7.250	7.375	**7.500**	7.625	maximum pipe OD for die & jaw
		Rt. xxxxx			*6.375*	*6.500*	*6.625*	*6.750*	*6.875*	***7.000***	*7.125*	*minimum undersized condition*
7 5/8 x 7 5/8	CJDT76X07625	Left 76212-7625L	BUDT86-07625	7.625	7.000	7.125	7.250	7.375	7.500	**7.625**	7.750	maximum pipe OD for die & jaw
		Rt. 76212-7625R			*6.500*	*6.625*	*6.750*	*6.875*	*7.000*	***7.125***	*7.250*	*minimum undersized condition*
7 5/8 x 7 3/4	N/A		BUDT86-07750	7.750	7.125	7.250	7.375	7.500	7.625	**7.750**	7.875	maximum pipe OD for die & jaw
					6.625	*6.750*	*6.875*	*7.000*	*7.125*	***7.250***	*7.375*	*minimum undersized condition*
7 5/8 x 7 13/16	N/A		BUDT86-07812	7.812	7.187	7.312	7.437	7.562	7.687	**7.812**	7.937	maximum pipe OD for die & jaw
					6.687	*6.812*	*6.937*	*7.062*	*7.187*	***7.312***	*7.437*	*minimum undersized condition*
7 5/8 x 8	N/A		BUDT86-08000	8.000	7.375	7.500	7.625	7.750	7.875	**8.000**	8.125	maximum pipe OD for die & jaw
					6.875	*7.000*	*7.125*	*7.250*	*7.375*	***7.500***	*7.625*	*minimum undersized condition*

Gripping range, jaw, adapters and dovetail die inserts for CLINCHER® 7 5/8 UHT Tong and 8 5/8 UHT Backup

Nominal Jaw and Dovetail Die Adapter Size	Jaw Assembly Part Number **Manuf. Before 11/19/07** assembly consists of two jaws c/w pins, rollers, dovetail dies and die retainers	dovetail jaw part number **Manuf. Before 11/19/07**	dovetail die adapter part number 3 dovetail die adapters required to dress backup	nominal jaw size	Jaw gripping range when dressed with1 1/4" wide xx.xx" long dovetail strip dies with thickness of:							
					0.8125	0.75	0.6875	0.625	0.5625	**0.5**	0.4375	*<<dovetail die thickness*
					undersized (use this size for emergencies only)	undersized	undersized	undersized	undersized	**STANDARD**	oversized (use this size for emergencies only)	*<<pipe application*
7 5/8 x 8 1/4	N/A		BUDT86-08250	8.250	7.625	7.750	7.875	8.000	8.125	**8.250**	8.375	maximum pipe OD for die & jaw
					7.125	*7.250*	*7.375*	*7.500*	*7.625*	***7.750***	*7.875*	*minimum undersized condition*
			Note 3									
***CLINCHER®** part number for 1 1/4" wide x 3 7/8" long straight toothed dovetail die inserts used in dovetail die adapters (2 pcs required per adapter or 6 pcs required per set of 3 adapters>>*					DTI1661	DTI1651	DTI1642	DTI1632	DTI1622	**DTI1601**	DTI1612	
***CLINCHER®** part number for 1 1/4" wide x 3 7/8" long diamond toothed dovetail die inserts used in dovetail die adapters (2 pcs required per adapter or 6 pcs required per set of 3 adapters>>*					upon request	upon request	upon request	DTI1632D	DTI1622D	**DTI1601D**	upon request	
***CLINCHER®** part number for 1 1/4" wide x 5" long straight toothed dovetail die inserts used in dovetail jaw assembly (2 pcs required per jaw or 4 pcs required per jaw assembly>>*					DTI1664	DTI1693	DTI1646	DTI1633	DTI1623	**DTI1602**	DTI1617	
***CLINCHER®** part number for 1 1/4" wide x 5" long diamond toothed dovetail die inserts used in dovetail jaw assembly (2 pcs required per jaw or 4 pcs required per jaw assembly>>*					upon request	upon request	upon request	upon request	DTI1623D	**DTI1602D**	DTI1617D	

Note 1: All CJDT76X series of jaws may be used in CLE7625 UHT tongs.
Note 2: xxxxx indicates this size has not been designed at this time, but is available upon request.
Note 3: Larger than 8 1/4" up to 8 3/4" use Wrap Around Die SDI86-xxxxx

Gripping range, jaw, adapters and dovetail die inserts for CLINCHER® 7 5/8 UHT Tong and 8 5/8 UHT Backup

Nominal Jaw and Dovetail Die Adapter Size	Jaw Assembly Part Number **Manuf. After 11/19/07** assembly consists of two jaws c/w pins, rollers, dovetail dies and die retainers	dovetail jaw part number **Manuf. After 11/19/07**	dovetail die adapter part number 3 dovetail die adapters required to dress backup	nominal jaw size	Jaw gripping range when dressed with1 1/4" wide xx.xx" long dovetail strip dies with thickness of:							
					0.8125	0.75	0.6875	0.625	0.5625	**0.5**	0.4375	*<<dovetail die thickness*
					undersized (use this size for emergencies only)	undersized	undersized	undersized	undersized	**STANDARD**	oversized (use this size for emergencies only)	*<<pipe application*
7 5/8 x 2 3/8	CJDTLF78X02375	Left 78X2375L	BUDT86-xxxxx	2.375	7.125	7.250	7.375	7.500	7.625	**7.750**	7.875	maximum pipe OD for die & jaw
		Rt. 78X2375R			*1.750*	*1.875*	*2.000*	*2.125*	*2.250*	***2.375***	*2.500*	*minimum undersized condition*
7 5/8 x 2 7/8	CJDTLF78X02875	Left 78X2875L	BUDT86-02875	2.875	7.750	7.875	8.000	8.125	8.250	**8.375**	8.500	maximum pipe OD for die & jaw
		Rt. 78X2875R			*2.250*	*2.375*	*2.500*	*2.625*	*2.750*	***2.875***	*3.000*	*minimum undersized condition*
7 5/8 x 3 1/8	CJDTLF78X03125	Left 78X3125L	BUDT86-03125	3.125	2.500	2.625	2.750	2.875	3.000	**3.125**	3.250	maximum pipe OD for die & jaw
		Rt. 78X3125R			*2.000*	*2.125*	*2.250*	*2.375*	*2.500*	***2.625***	*2.750*	*minimum undersized condition*
7 5/8 x 3 3/8	CJDTLF78X03375	Left 78X3375L	BUDT86-03375	3.375	2.750	2.875	3.000	3.125	3.250	**3.375**	3.500	maximum pipe OD for die & jaw
		Rt. 78X3375R			*2.250*	*2.375*	*2.500*	*2.625*	*2.750*	***2.875***	*3.000*	*minimum undersized condition*
7 5/8 x 3 1/2	CJDTLF78X03500	Left 78X3500L	BUDT86-03500	3.500	2.875	3.000	3.125	3.250	3.375	**3.500**	3.625	maximum pipe OD for die & jaw
		Rt. 78X3500R			*2.375*	*2.500*	*2.625*	*2.750*	*2.875*	***3.000***	*3.125*	*minimum undersized condition*
7 5/8 x 4	CJDT78X04000	Left 78X4000L	BUDT86-xxxxx	4.000	8.875	9.000	9.125	9.250	9.375	**9.500**	9.625	maximum pipe OD for die & jaw
		Rt. 78X4000R			*3.375*	*3.500*	*3.625*	*3.750*	*3.875*	***4.000***	*4.125*	*minimum undersized condition*
7 5/8 x 4 1/8	CJDT78Xxxxxx	Left xxxxx	BUDT86-04125	4.125	3.500	3.625	3.750	3.875	4.000	**4.125**	4.250	maximum pipe OD for die & jaw
		Rt. xxxxx			*3.000*	*3.125*	*3.250*	*3.375*	*3.500*	***3.625***	*3.750*	*minimum undersized condition*
7 5/8 x 4 1/2	CJDT78X04500	Left 78X4500L	BUDT86-04500	4.500	3.875	4.000	4.125	4.250	4.375	**4.500**	4.625	maximum pipe OD for die & jaw
		Rt. 78X4500R			*3.375*	*3.500*	*3.625*	*3.750*	*3.875*	***4.000***	*4.125*	*minimum undersized condition*
7 5/8 x 4 5/8	CJDT78Xxxxxx	Left xxxxx	BUDT86-04625	4.625	4.000	4.125	4.250	4.375	4.500	**4.625**	4.750	maximum pipe OD for die & jaw
		Rt. xxxxx			*3.500*	*3.625*	*3.750*	*3.875*	*4.000*	***4.125***	*4.250*	*minimum undersized condition*
7 5/8 x 4 3/4	CJDT78Xxxxxx	Left xxxxx	BUDT86-04750	4.750	4.125	4.250	4.375	4.500	4.625	**4.750**	4.875	maximum pipe OD for die & jaw
		Rt. xxxxx			*3.625*	*3.750*	*3.875*	*4.000*	*4.125*	***4.250***	*4.375*	*minimum undersized condition*
7 5/8 x 5	CJDT78X05000	Left 78X5000L	BUDT86-05000	5.000	4.375	4.500	4.625	4.750	4.875	**5.000**	5.125	maximum pipe OD for die & jaw
		Rt. 78X5000R			*3.875*	*4.000*	*4.125*	*4.250*	*4.375*	***4.500***	*4.625*	*minimum undersized condition*
7 5/8 x 5 1/4	CJDT78Xxxxxx	Left xxxxx	BUDT86-05250	5.250	4.625	4.750	4.875	5.000	5.125	**5.250**	5.375	maximum pipe OD for die & jaw
		Rt. xxxxx			*4.125*	*4.250*	*4.375*	*4.500*	*4.625*	***4.750***	*4.875*	*minimum undersized condition*
7 5/8 x 5 1/2	CJDT78X05500	Left 78X5500L	BUDT86-05500	5.500	4.875	5.000	5.125	5.250	5.375	**5.500**	5.625	maximum pipe OD for die & jaw

Gripping range, jaw, adapters and dovetail die inserts for CLINCHER® 7 5/8 UHT Tong and 8 5/8 UHT Backup

Nominal Jaw and Dovetail Die Adapter Size	Jaw Assembly Part Number **Manuf. After 11/19/07** assembly consists of two jaws c/w pins, rollers, dovetail dies and die retainers	dovetail jaw part number **Manuf. After 11/19/07**	dovetail die adapter part number 3 dovetail die adapters required to dress backup	nominal jaw size	Jaw gripping range when dressed with1 1/4" wide xx.xx" long dovetail strip dies with thickness of:							
					0.8125	0.75	0.6875	0.625	0.5625	**0.5**	0.4375	*<<dovetail die thickness*
					undersized (use this size for emergencies only)	undersized	undersized	undersized	undersized	**STANDARD**	oversized (use this size for emergencies only)	*<<pipe application*
		Rt. 78X5500R			*4.375*	*4.500*	*4.625*	*4.750*	*4.875*	***5.000***	*5.125*	*minimum undersized condition*
7 5/8 x 6	CJDT78X06000	Left 78X6000L	BUDT86-xxxxx	6.000	10.750	10.875	11.000	11.125	11.250	**11.375**	11.500	maximum pipe OD for die & jaw
		Rt. 78X6000R			*5.375*	*5.500*	*5.625*	*5.750*	*5.875*	***6.000***	*6.125*	*minimum undersized condition*
7 5/8 x 6 1/4	CJDT76Xxxxxx	Left xxxxx	BUDT86-06250	6.250	5.625	5.750	5.875	6.000	6.125	**6.250**	6.375	maximum pipe OD for die & jaw
		Rt. xxxxx			*5.125*	*5.250*	*5.375*	*5.500*	*5.625*	***5.750***	*5.875*	*minimum undersized condition*
7 5/8 x 6 3/8	CJDT76Xxxxxx	Left xxxxx	BUDT86-06375	6.375	5.750	5.875	6.000	6.125	6.250	**6.375**	6.500	maximum pipe OD for die & jaw
		Rt. xxxxx			*5.250*	*5.375*	*5.500*	*5.625*	*5.750*	***5.875***	*6.000*	*minimum undersized condition*
7 5/8 x 6 1/2	CJDT76Xxxxxx	Left xxxxx	BUDT86-06500	6.500	5.875	6.000	6.125	6.250	6.375	**6.500**	6.625	maximum pipe OD for die & jaw
		Rt. xxxxx			*5.375*	*5.500*	*5.625*	*5.750*	*5.875*	***6.000***	*6.125*	*minimum undersized condition*
7 5/8 x 6 5/8	CJDT76X06625	Left 76X6625L	BUDT86-06625	6.625	6.000	6.125	6.250	6.375	6.500	**6.625**	6.750	maximum pipe OD for die & jaw
		Rt. 76X6625R			*5.500*	*5.625*	*5.750*	*5.875*	*6.000*	***6.125***	*6.250*	*minimum undersized condition*
7 5/8 x 7	CJDT76X07000	Left 76X7000L	BUDT86-07000	7.000	6.375	6.500	6.625	6.750	6.875	**7.000**	7.125	maximum pipe OD for die & jaw
		Rt. 76X7000R			*5.875*	*6.000*	*6.125*	*6.250*	*6.375*	***6.500***	*6.625*	*minimum undersized condition*
7 5/8 x 7 1/4	CJDT76Xxxxxx	Left xxxxx	BUDT86-07250	7.250	6.625	6.750	6.875	7.000	7.125	**7.250**	7.375	maximum pipe OD for die & jaw
		Rt. xxxxx			*6.125*	*6.250*	*6.375*	*6.500*	*6.625*	***6.750***	*6.875*	*minimum undersized condition*
7 5/8 x 7 1/2	CJDT76Xxxxxx	Left xxxxx	BUDT86-07500	7.500	6.875	7.000	7.125	7.250	7.375	**7.500**	7.625	maximum pipe OD for die & jaw
		Rt. xxxxx			*6.375*	*6.500*	*6.625*	*6.750*	*6.875*	***7.000***	*7.125*	*minimum undersized condition*
7 5/8 x 7 5/8	CJDT76X07625	Left 76212-7625L	BUDT86-07625	7.625	7.000	7.125	7.250	7.375	7.500	**7.625**	7.750	maximum pipe OD for die & jaw
		Rt. 76212-7625R			*6.500*	*6.625*	*6.750*	*6.875*	*7.000*	***7.125***	*7.250*	*minimum undersized condition*
7 5/8 x 7 3/4	N/A		BUDT86-07750	7.750	7.125	7.250	7.375	7.500	7.625	**7.750**	7.875	maximum pipe OD for die & jaw
					6.625	*6.750*	*6.875*	*7.000*	*7.125*	***7.250***	*7.375*	*minimum undersized condition*
7 5/8 x 7 13/16	N/A		BUDT86-07812	7.812	7.187	7.312	7.437	7.562	7.687	**7.812**	7.937	maximum pipe OD for die & jaw
					6.687	*6.812*	*6.937*	*7.062*	*7.187*	***7.312***	*7.437*	*minimum undersized condition*
7 5/8 x 8	N/A		BUDT86-08000	8.000	7.375	7.500	7.625	7.750	7.875	**8.000**	8.125	maximum pipe OD for die & jaw
					6.875	*7.000*	*7.125*	*7.250*	*7.375*	***7.500***	*7.625*	*minimum undersized condition*

Gripping range, jaw, adapters and dovetail die inserts for CLINCHER® 7 5/8 UHT Tong and 8 5/8 UHT Backup

Nominal Jaw and Dovetail Die Adapter Size	Jaw Assembly Part Number **Manuf. After 11/19/07** assembly consists of two jaws c/w pins, rollers, dovetail dies and die retainers	dovetail jaw part number **Manuf. After 11/19/07**	dovetail die adapter part number 3 dovetail die adapters required to dress backup	nominal jaw size	Jaw gripping range when dressed with1 1/4" wide xx.xx" long dovetail strip dies with thickness of:							
					0.8125	0.75	0.6875	0.625	0.5625	**0.5**	0.4375	*<<dovetail die thickness*
					undersized (use this size for emergencies only)	undersized	undersized	undersized	undersized	**STANDARD**	oversized (use this size for emergencies only)	*<<pipe application*
7 5/8 x 8 1/4	N/A		BUDT86-08250	8.250	7.625	7.750	7.875	8.000	8.125	**8.250**	8.375	maximum pipe OD for die & jaw
					7.125	*7.250*	*7.375*	*7.500*	*7.625*	***7.750***	*7.875*	*minimum undersized condition*
			Note 3									
***CLINCHER®** part number for 1 1/4" wide x 3 7/8" long straight toothed dovetail die inserts used in dovetail die adapters (2 pcs required per adapter or 6 pcs required per set of 3 adapters>>*					DTI1661	DTI1651	DTI1642	DTI1632	DTI1622	**DTI1601**	DTI1612	
***CLINCHER®** part number for 1 1/4" wide x 3 7/8" long diamond toothed dovetail die inserts used in dovetail die adapters (2 pcs required per adapter or 6 pcs required per set of 3 adapters>>*					upon request	upon request	upon request	DTI1632D	DTI1622D	**DTI1601D**	upon request	
***CLINCHER®** part number for 1 1/4" wide x 5" long straight toothed dovetail die inserts used in dovetail jaw assembly (2 pcs required per jaw or 4 pcs required per jaw assembly>>*					DTI1664	DTI1693	DTI1646	DTI1633	DTI1623	**DTI1602**	DTI1617	
***CLINCHER®** part number for 1 1/4" wide x 5" long diamond toothed dovetail die inserts used in dovetail jaw assembly (2 pcs required per jaw or 4 pcs required per jaw assembly>>*					upon request	upon request	upon request	upon request	DTI1623D	**DTI1602D**	DTI1617D	

Note 1: All CJDT76X series of jaws may be used in CLE7625 UHT tongs.
Note 2: xxxxx indicates this size has not been designed at this time, but is available upon request.
Note 3: Larger than 8 1/4" up to 8 3/4" use Wrap Around Die SDI86-xxxxx

Splined jaws and splined wraparound dies for CLINCHER® 7 5/8 UHT Tong and 7 5/8 or 8 5/8 UHT Backup for use on tubing and casing

Nominal wraparound tong jaw and wraparound adapter size	Splined Jaw Assembly Number	splined jaw part number	splined jaw roller part number	splined jaw pin part number	top clip part number for tong jaws	bottom clip part number for tong jaws	available wraparound die series (two dies are required to dress tong jaws and three dies are required to dress backup for a total of five dies per tool - excludes any dies required for couplings)		
	assembly consists of two jaws c/w pins, rollers, clips and clip	*two pcs reqd per set*	*two pcs reqd per set*	*two pcs reqd per set*	*two pcs reqd per set*	*two pcs reqd per set*	fine tooth steel dies for tong	**GRIT FACE™** dies for tong	non-marking aluminum dies for tong
7 5/8 x 4 1/2 - 2 3/8	CJ-76A	76015	76138	76013	BUC4520	BUC4531-S1	BUC4500-nnnnn	BB7625-nnnnn	BUCA7625-nnnnn
7 5/8 x 7 5/8 - 4 1/2	CJ-76B	76012	76136	76013	76017	76017	CLE7625-nnnnn	BB7625-nnnnn	BUCA7625-nnnnn
7 5/8 x 4 1/2 - 2 1/16	CJ-LF-76A	76015	76139 w/ Bushing 58079 (2 per roller)	76013	BUC4520	BUC4531-S1	BUC4500-nnnnn	BB7625-nnnnn	BUCA7625-nnnnn
7 5/8 x 7 5/8 - 2 3/8	CJ-LF-76B	76009	76137 w/ Bushing 20DU14 (5 per roller)	76013	76017	76017	CLE7625-nnnnn	BB7625-nnnnn	BUCA7625-nnnnn

-nnnnn indicates size being designated by replacing "nnnnn" sequence with size required (in inches) to three decimal places; i.e., 4.500 for 4 1/2" OD casing.

Note: **CLINCHER®** wraparound dies are machined to specific casing, tubing, coupling or accessory diameter. Additional dies must be orderd to match specific coupling diameters associated with accessories or special clearance premium tubular connections.

ASSEMBLY TORQUE REQUIREMENTS

Fastener Lubrication and Make Up Torque Requirements

Most bolts, nuts and other threaded components are to be lubricated with Never-Seez or equivalent before assembly. Certain fasteners are to be assembled using permanent or removable Loctite as indicated in the assembly instructions and drawings. All tapered pipe threads are to be treated with a Teflon based pipe dope to assist in makeup and prevent leakage.

CAUTION: Do not use Teflon tape. Improper application of Teflon tape can cause joint failures. Teflon tape can release large particles which can plug small passages in hydraulic equipment.

All standard fasteners used in **CLINCHER®** products are to be GRADE 8 or better. DO NOT SUBSTITUTE lessor grades of fasteners. All fasteners are to be made up to the torque charted below. Failure to properly assemble these fasteners can result in their loss, product malfunction and ultimately result in situations where personnel can be exposed to dangerous situations.

UHT TONG and BACKUP FASTENERS		
Size	***Application***	***Torque***
1/4 - 20 NC	door switch mounting bolts, tong clip bolts	14 ft lbs
3/8 - 16 Set Screws	bearing caps, door switch adj. sleeve	* [1]
3/8 - 16 NC	housing cover, brake bands, backup side plates, tong & backup clip bolts	38 ft lbs
1/2- 13 NC	top secondary bearing cap, cage plate bolts, locking pin, ring gear key, motor mounts, backup halo, leg bolts	93 ft lbs
5/8 - 11 NC	tong plates, bearing caps, idler shaft bolts, cam follower nuts, backup cyl. gland bolts, hanger bolts	180 ft lbs
1 - 12 NF	dumbell roller	* [2]
1 - 8 NC	UHT backup backing bolt	100 ft lbs
1 1/4 - 12 NF	backup bulkhead connector	100 ft lbs
1 1/2 - 12 NF	idler shaft	1,200 ft lbs

*1 Bearing Caps: Coat with removable Loctite, tighten until screw contacts bearing, back off 1 turn. Door Switch Adj. Sleeve: Coat with removable Loctite, tighten by hand until snug.

*2 Tighten until all slack is removed, but dumbell roller is still free to rotate by hand.

LUBRICATION STANDARDS

Bearings and gears must be lubricated to minimize friction, cool, exclude foreign matter and prevent corrosion. **CLINCHER®** recommends using Texaco Marfak MP 2 or equivalent for all grease zerts, roller bearings and bushings. Gears located within the clutch housing or between the tong plates are to be heavily lubricated using PLUSCO 855 or equivalent.

OPERATIONAL INSTRUCTIONS

SUSPENSION

A) Tong should be hung by a 7/8" IWRC minimum O.D. wire cable with a 31 ton minimum breaking strength. It should be hung as close to the center of the drill rotary without interfering with operation of drill string and lifting equipment. It is recommended the operator make use of the **CLINCHER®** Lift Cylinder. The **CLINCHER®** Lift Cylinder incorporates a hydraulic cylinder and manual lift spring. The hydraulic cylinder portion is used to assist in the raising and lowering of the tong and backup while the spring allows for movement during make-up and break-out.

   WARNING: The suspension system must allow the tong to easily move down a distance equivalent to the thread make-up length. If significant resistance is encountered the suspension system may be subject to load which could cause its failure, damage equipment, or expose personnel to severe or fatal hazards.

B) Assure that tong is suspended in level manner. Both tong and the backup must be level at the point they contact the tubular. Using adjustment screws and slots in rigid hanger assembly, adjust tong so that it hangs level on horizontal axis and is parallel to tubular on vertical axis.

C) Make certain that floor space is adequate to maneuver tong on and off pipe. The space must be clear of obstructions to allow safe and unrestricted operation.

D) Attach 1" IWRC minimum wire cable with a 51.7 ton minimum breaking strength or better, as a tong back up line at 90 degree angle to tong and at same level to insure proper readout of torque indicator. You should always have snubbing line attached. Use of a integral hydraulic backup is safer than manual backup, but operators should maintain additional safety of snubbing line to prevent injury in case of hydraulic failure or the failure of operator to have backup properly applied to tubular. This equipment generates extreme torque and should be used with caution.

Jaw and Die Installation

A) Be sure all power to unit is off and power unit itself is shut down.

B) Determine O.D. of tubular to be made-up or broken-out. Use proper dies to bite O.D. of tubular and insert as follows: Remove sliding head jaws (2) from cage plate pockets. Insert one jaw with proper dies into pocket assuring the jaw roller pin faces upward. Repeat procedure for other side.

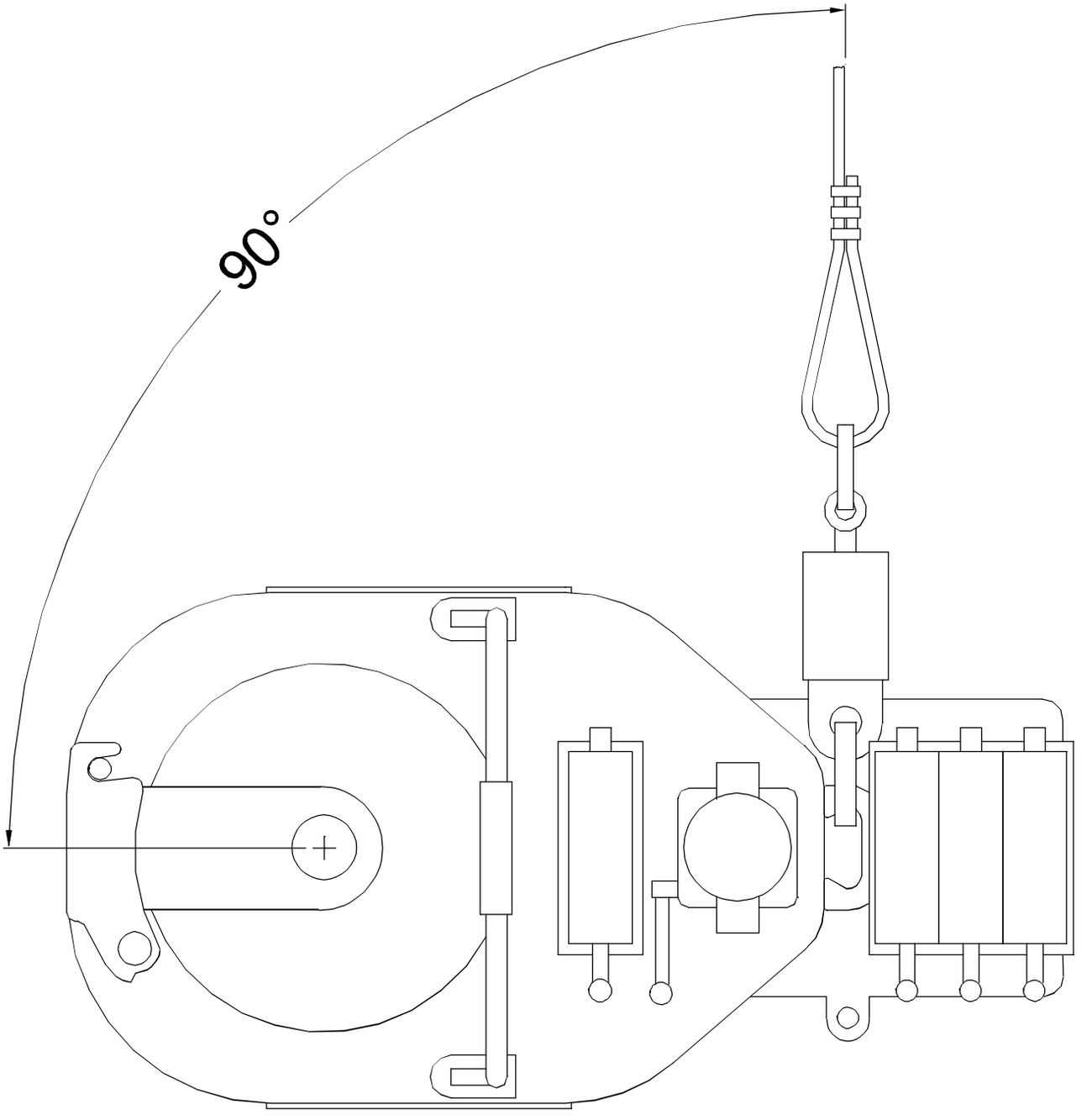
OPERATIONAL INSTRUCTIONS

Hydraulic Lines

A) Be sure all power to unit is off and power unit itself is shut down.

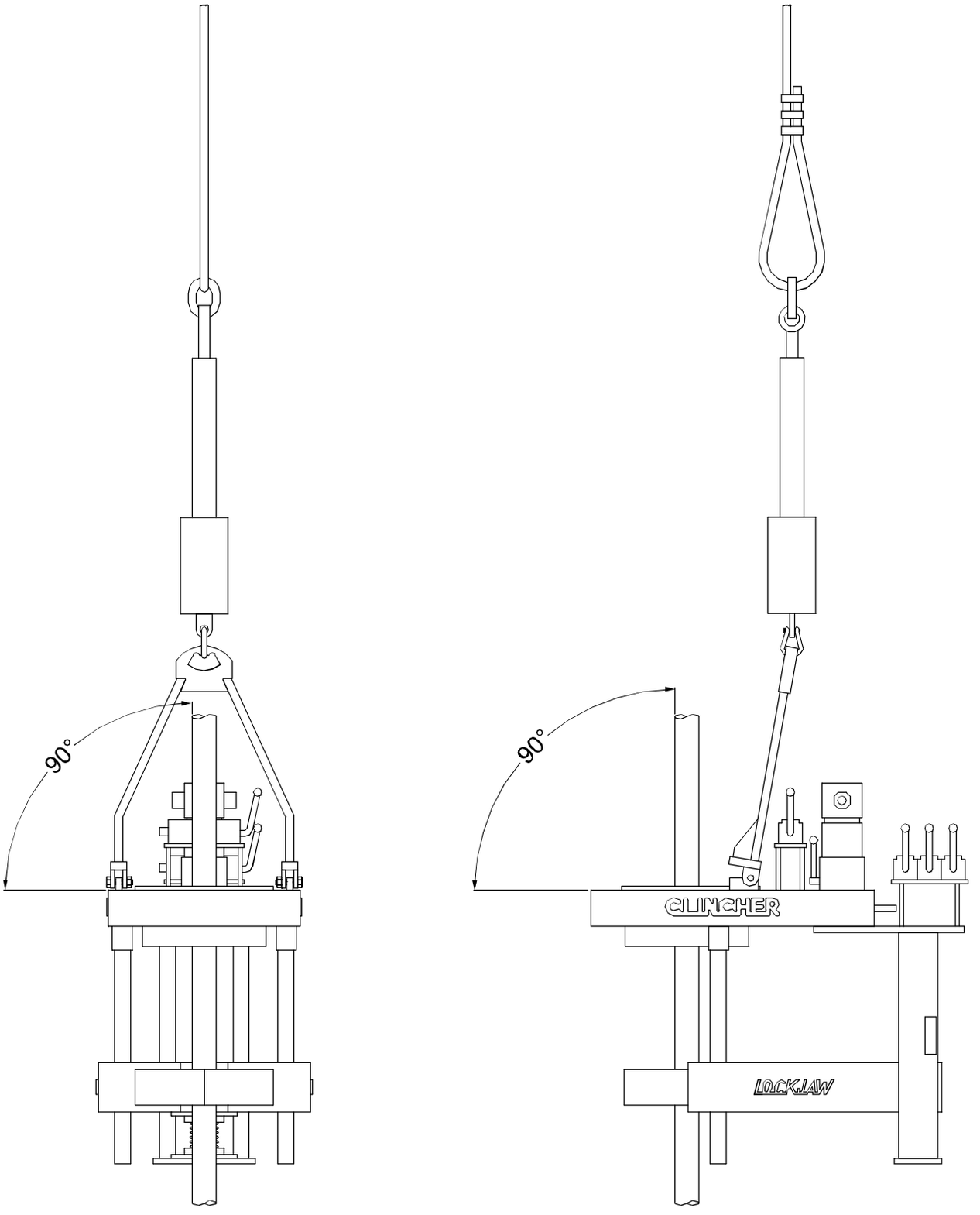
B) Always inspect hoses prior to installation for abrasions, kinks, and other visible damage.

C) Install hydraulic supply hose and hydraulic return hose between tong and hydraulic power unit. Be advised that the standard installation on **CLINCHER®** tong calls for 1" Hydraulic Supply hose and 1-1/4" Hydraulic Return hose. The differing hoses eliminates the possibility attaching the wrong hose to the wrong outlet while at the same time reducing back pressure in your hydraulic system.



TYPICAL SNUB LINE INSTALLATION

NOTE: SNUB LINE IS PERPENDICULAR
TO AXIS OF TONG



TYPICAL TONG INSTALLATION

NOTE: TONG IS PERPENDICULAR
TO TUBING

OPERATIONAL INSTRUCTIONS

Tong Operation

A. Insure proper dies are installed. Connect hydraulic hoses, verify reservoir is full of hydraulic fluid and insure suction valve is open.

B. Open bypass valve to hydraulic system, then check to make sure all hose connections are secure and hydraulic system is free of leaks.

C. Be certain door is completely closed before operation to insure safe operation. The **CLINCHER®** CLE7625 UHT is equipped with a door switch, which prevents operation of the tong when door is even partially open.

D. Use power unit to start up procedure as outlined in your owners manual supplied by the manufacturer.

E. In the event hoses are not tightened securely, possible failures to hydraulic system can occur.

   1) If pressure supply hoses are restricted or flow is blocked, pressure will increase in the hydraulic power unit, resulting in increased RPM in the power unit.

   2) If return line hoses are restricted or flow is blocked, pressure will increase in the hydraulic power unit and the hydraulic system to the tong itself, resulting in the tong motor increasing to maximum pressure and possible motor seal failure.

F. After completion of A through E restart the power unit and allow engine to idle for approximately 10 minutes. Slowly close bypass valve to allow circulation of hydraulic oil through tong and hoses. Place shifting lever into low and rotate several times. Repeat in reverse. If correct jaw-die combination is installed, the unit is now ready to run pipe.

G. Adjust height of tong to proper height, using the control valve located all the way to the right of rear valve bank assembly.

H. Stand in the normal operators position, insert the locking pin into the rear cage plate hole (on operators side). This pin allows ring gear to rotate clockwise (make-up) and engage the cam to close jaws on pipe.

I. Swing tong and backup onto tubing, making sure to align tubing on rear jaw of backup. Close backup jaws by pushing middle control lever forward. The design of the **CLINCHER®** Integral Backup centers pipe in the backup and tong. Close tong door.

J. Rotate ring gear clockwise by pushing motor control lever on the front valve bank assembly forward until jaws lock on pipe and continue to rotate until desired amount or torque is applied.

K. After correct amount of torque specific to that connection has been applied, release tong jaws by pulling back on motor control lever until jaws release and throat in cage plate is aligned with door opening. Open door.

L. Release backup by pulling back on right control lever on rear valve bank assembly until backup jaws are completely retracted.

M. High and low gear is adjusted by use of shifting lever PN 45060 (1st Generation Tongs) or Shift Assembly PN 45091 (2nd Generation Tongs), located to the left side of the shifting housing. With the lever in the upwards position the tong is in high gear. With the shifting lever in the downward position, the tong is in low gear.

REMOTE FUNCTIONALITY OVERVIEW

1. **Overview**
   - Explosion Proof Boxes
     - CAUTION: The ATEX Certified boxes are sealed from the factory and should NOT be opened under any circumstances
     - WARNING: Opening these boxes can result in serious injury or death
   - Visual & Audible Indicators (Lights & Sirens)
     - Several indicators serve to alert all nearby personnel of operational status and potential hazards
   - Interlocks
     - Various sensors will monitor and control operating conditions of the Power Tong and Backup
     - Some interlocks will only prevent operations in remote mode; in these cases manual operations will not be interrupted
   - Time Delays (Remote Operation Only)
     - Some functions will be delayed in some circumstances to prevent damage to the Power Tong and Backup
     - These won't last longer than five (5) seconds
2. **VISUAL & AUDIBLE INDICATORS**

   Several Indicators serve to alert all nearby personnel of operational status and potential hazards
3. **Visual Indicators**
   1. TONG
   2. • No Indicators
      - The remote system is NOT enabled
      - Continuous Flashing of Strobe on Tong
      - The remote system is enabled
   3. CONSOLE
   4. • No Indicators
      - The remote system is NOT enabled
      - Remote Light Flashing
      - Power on
      - Remote Light Solid
      - Tong Door & Backup open

        AND
      - Cage Plate has returned to open throat
      - Tong Door Light Solid
      - Tong Door OPEN
      - Backup Door Light Solid
      - Backup Open
4. **Audible Indicators**
   1. TONG
   2. • Five Blasts of Siren
      - Remote system has been enabled
      - Single Long Blast of Siren
      - Cage Plate open throat
      - Continuous Short Blasts of Siren
      - Tong Lift/Lower OR Push/Pull is activated
   3. CONSOLE
   4. • No Sirens on Console
5. **INTERLOCKS**

   Various sensors will monitor and control operating conditions of the Power Tong and Backup

REMOTE FUNCTIONALITY OVERVIEW

6 **Interlocks**
- Tong Door Closed
  - The ring gear will not rotate if th e tong door is even slightly OPEN
  - The Pusher will not function if the tong door is CLOSED
  - The Lift Cylinder will not function if the tong door is CLOSED

7 **Interlocks**
- Backup Door Open / Backup Cylinders retracted
  - This will allow Lift/Lower AND Push/Pull function

  *These functions will not be prevented in manual operation

8 **Interlocks**
- Tong Open Throat
  - The remote reversing pin cylinders will ONLY function if the Tong throat is in the open position
- Reversing Pin Cylinders Extended
  - The Tong will not rotate if either reversing pin cylinder is extended
- Tong Rotation
  - The Gear Shift function will be inoperable if the Tong is rotating

9 **TIME DELAYS**

Some functions will be delayed in some circumstances to prevent damage to the Power Tong and Backup | The delays will be present in remote operation only

All Time Delays are designed to facilitate safe operation of the equipment

10 **Time Delays**
- Initial Startup
  - ALL functions will be inoperable for approximately five (5) seconds immediately following startup of the remote system
  - After enabling the Lift/Lower OR Push/Pull functions, there will be a two (2) second delay in response time

11 **Time Delays**
- Following Reversing Pin Cylinder Operation
  - Rotation of the ring gear will be delayed for approximately two (2) seconds immediately following activation of either reversing pin cylinder

12 **Operation**
- Special Considerations
  - Tong Mode and Reversing Pin switches must beenabled to match the desired function of the tong
  - Tong & Backup must be in open position in order for Lift/Lower OR Push/Pull functions to be enabled
  - Cage Plate & Ring Gear must be in open throat position to enable reversing pin cylinders
  - Cage Plate & Ring Gear will not rotate if the Tong door is open, even slightly

MAINTENANCE INSTRUCTIONS

CLINCHER® recommends that owners of **CLINCHER®** Hydraulic Power Tongs, Backups, **CHROMEMASTER™**s and accessories adapt a regularly scheduled maintenance program. Implementation of this type of program offers several benefits. First you increase the life of your equipment, secondly, you may find a problem before it escalates to a costly repair or down time on the job, and most importantly, prevent injury to operating personnel.

A major inspection (described at the end of this section) should be carried out if equipment is suspected to have been damaged during transit or is to be mobilized to a remote location where maintenance operations are difficult to carry out.

Routine Maintenance

Cleaning - Upon return from each and every job:

A) Pre-wash unit to remove majority of dirt and grease build up as to allow removal of dies, and inspection of overall condition of unit.

B) Remove and inspect dies from tong and backup. Note any missing or damaged die retainers, and or die retainer bolts.

C) Remove side jaws from tong and inspect side jaw for missing or broken parts, damaged splines, broken ears (locking hooks on front portion of side jaws.)

D) Clean and inspect side jaws, jaw pins, jaw rollers for damage or excessive wear (cracks, breakage, and uneven wear patterns). Reassemble jaw sections replacing any damaged parts. Lubricate pins, and rollers and reinstall in tong.

E) Clean and inspect backup operating cylinder. Insure sline area is free from damage and any rust or dirt is removed. Replace any missing or damaged die retainer clips and die retainer bolts.

F) Inspect all hoses for wear, replace as necessary.

G) Inspect hanger assembly to assure all parts are returned and in operating condition. (*i.e.* H-Plates, spring, leg springs, leg spring caps and pins.)

H) Replace jaw, pins and rollers in tong.

I) Lubricate tong's cam followers (upper and lower), dumbell roller shafts (upper and lower zerts), door shaft, center idler gear shaft (lower zert), outboard idler gear shafts (2, upper zerts), pinion gear, and secondary gear assemblies (Pinion gear and secondary gear assemblies are installed with sealed bearings. There is no provisions to grease these bearings. However, if replaced by non-sealed bearings, the 1/8" N.P.T. flush plugs should be replaced with zerts PN 1001 and both gear assemblies should be added to the regular lubrication schedule.), low gear housing, and shift housing (2 zerts each), and re-pack tong body cavity. Lubricate zerts in backup plates and pins.

MAINTENANCE INSTRUCTIONS

J) Install dies of a size needed for testing purposes, and attach hydraulic power unit to tong. Before energizing power unit make certain no one is working on tong or backup and all tools and parts are removed from the tong and backup.

K) Insert test mandrel of the exact same size as the dies which are installed in the tong and backup. **Caution:** Testing the function of the backup without the proper size dies installed and/or without the proper sized mandrel in place, you risk serious damage to the backup cylinder.

L) After power unit has reached operating R.P.M. and temperature, operate the backup control valve and close backup around test mandrel using sufficient flow and pressure to clamp mandrel and maintain pressure to backup. (Recommended operating pressure of 2,500 psi) Backup pressure gauge should match system operating pressure. After release of control valve you may experience a slight drop in backup pressure (up to 300 psi) this is normal. If backup pressure drops more than 300 psi within 2 minutes, you may be experiencing a hydraulic leak.

M) While maintaining pressure on backup visually inspect hoses, stainless steel lines, fittings, etc., for seepage of hydraulic fluid. Repair or replace parts causing leaks. If you see no visible external leaks and your backup is still losing pressure, there may be an internal leak in the operating cylinder or load holding valve allowing fluid to bypass the piston. It is recommended that the backup be returned to the manufacturer for repair.

N) If at this time your backup is functioning correctly, open and close unit several time to insure consistent operation.

O) With the proper dies installed in the tong and backup, and test mandrel locked in the backup, place reversing pin into the make-up position, set tong into low gear and operate tong through several cycles of locking, biting and torquing to required torque. Change reversing pin to break-out position and repeat. Repeat same procedure in high gear.
Note: Torque developed in high gear is considerably less than torque developed in low gear.

P) Test door interlock system by opening door slightly with tong rotating. (Remove test mandrel for this procedure.) The tongs rotation should stop. If tong rotation fails to stop, close door, cease rotation, deactivate power unit, and inspect door interlock switch for damage. Insure that adjustment collar is oriented to allow wheel of door switch to fit into recess on collar.
Warning: If door switch system is not functioning properly tong must not be used.

Q) Re-inspect tong and backup hydraulic system for leaks.

R) If at this time the unit is functioning as intended, replace all covers and grease splines in tong and backup (side jaws and back jaws), tape or grease spools on control valves (to prevent paint from adhering to polished spool surface), prime and paint unit for storage.

MAINTENANCE INSTRUCTIONS

Recommended Lubrication Schedule Performed After Completion of Each Job

Hydraulic Tong

a) Cam followers: upper and lower (all)
b) Dumbell roller shafts: upper and lower (all)
c) Door shaft: upper and lower
d) Center Idler shaft
e) Outboard Idler shafts (2)
f) Low gear housing (2 zerts)
g) Shift housing (2 zerts)
h) Re-pack tong cavity
i) Pinion and secondary gear shafts (if sealed bearings have been replaced by non-sealed bearings)
j) Jaw rollers and pins: Remove jaw pins and rollers, clean and lubricate with gear grease
k) Inspect hydraulic fluid for foreign material and contaminant. Filter or replace. Your must filter or replace entire system including power unit tank and lines along with tong to insure all contaminants are removed.

Annual Major Maintenance

Inspection and repair

Routine preventative maintenance will significantly extend the operating life of your equipment, reduce operating cost and avoid downtime. **CLINCHER®** recommends a program of frequent routine inspection, and if equipment is suspected to have been damaged during transit or is to be mobilized to a remote location where maintenance operations are difficult to carry out, perform the following:

A) Visually inspect components on power tong or backup which could possibly have been damaged either during operation or transit. *i.e.* Damage to hanger assembly, hydraulic backup, mounting legs, or hydraulic valve assembly.

B) Check test date. Ensure that a load test and inspection was carried out within the last 9 months.

C) Check ring gear. Check for any signs of damage or wear.

D) Remove motor and valve assembly from the tong body.

E) Check motor seal. Apply hydraulic power, run motor and visually check motor seal for any signs of leakage.

F) Check drive gear, high and low pinion gears. Check for excessive sign of wear on motor gear.

G) Check condition of control valve spools. Activate valves and check for any sign of wear, pitting, or scoring of the chrome surface of spools. If spool is damaged in any way, the complete section must be changed out. Spools are not interchangeable.

MAINTENANCE INSTRUCTIONS

H) Check gear selector and shaft. Visually inspect the shifting shaft for alignment and straightness.

I) Check Hi/Low Gear assembly. Visually inspect high and low clutch and gears for any sign of chipped, broken, or worn teeth.

J) Check dumbell rollers, shafts and bushings. Check for excess movement on either bearings, bushings, shafts or dumbells.

K) Check idler gears and center pinion shaft gears and bearings. Check that there are no signs of worn, chipped, or broken teeth on idler and center pinion shaft gears.

L) Check door bearings. Visually check excess movement on bearings at door assembly. If excess movement is found door must be removed making careful note of bearing washers positions for reassembly.

M) Check door switch system. Visually check that door switch valve has sufficient strength to hold door in closed position. If this is not the case, then repairs are required.

N) Check door safety device. Functionally check tong door safety switch. Engage low gear, open tong door and push rotor control lever forward as if to rotate rotor. If safety device is operational then the rotor will not rotate.

O) Check lifting hanger test date. Check lifting hanger for damage. Ensure that a load test and inspection was carried out within the last 9 months.

P) Check condition of all hydraulic hoses and fittings. Visually inspect all hydraulic hoses fitted to the tong and in the backup for any signs of leaks, cuts, or wear.

Q) Reinstall all parts which were removed for inspection and/or damage. Connect to hydraulic power supply and function test operation of tong in high, low, forward, and reverse. Torque test utilizing appropriate dies and test mandrel. Test operation of lift cylinder.

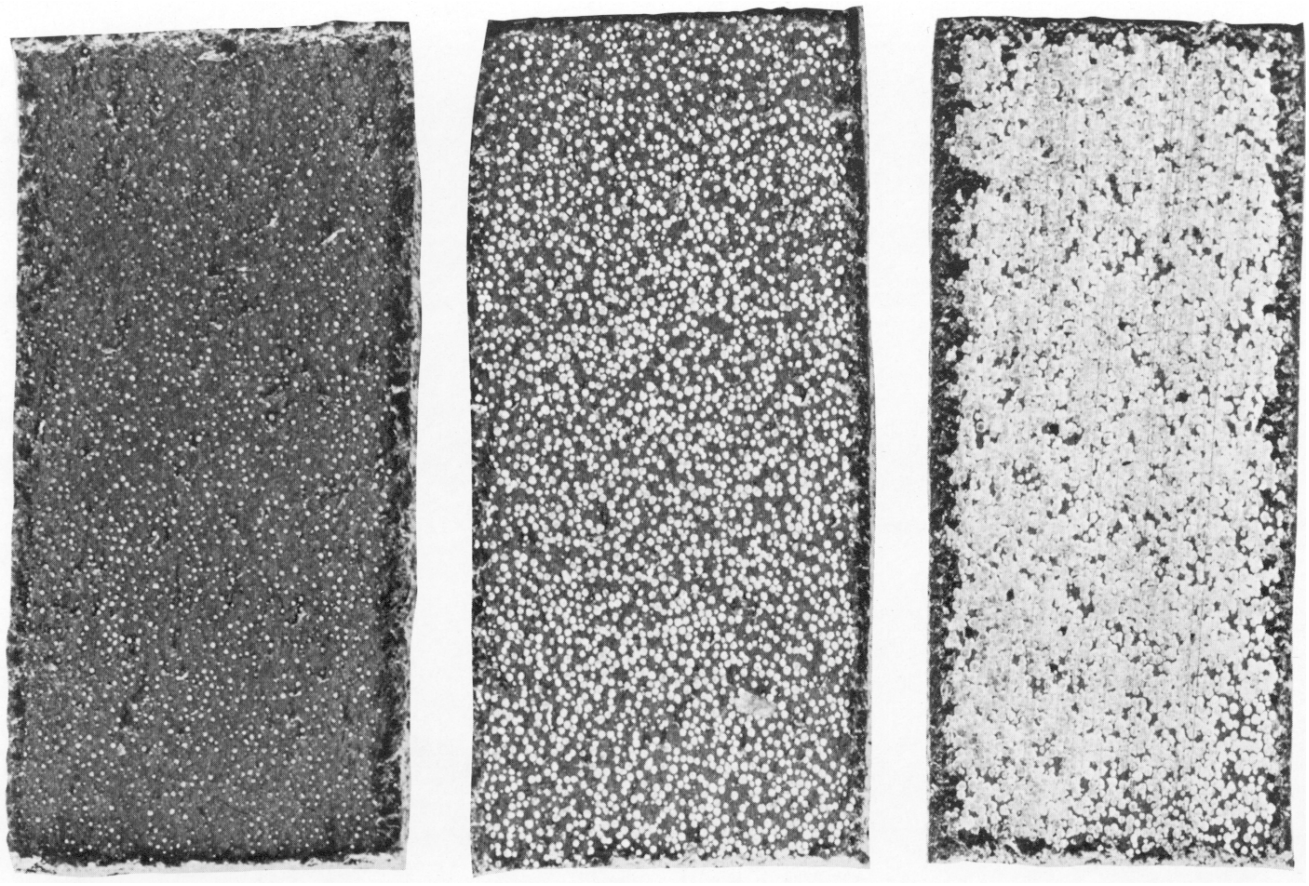
R) Inspect power unit system according to manufactures specifications.

S) Lubricate tong and backup according to maintenance schedule preceding this section.

T) Paint, remembering to mask off surfaces not intending to paint with grease or masking tape.

U) Complete dated inspection report giving details of all duties performed along with complete list of items replaced.

DU® BEARING DRY WEAR PROCESS



1. 2. 3.

1. Running-in completed. Low wear rate starts when up to 10% of the bronze is exposed.

2. Typical surface appearance when DU® bearing approaches its half life with 40% to 50% of the bronze exposed.

3. Bronze is beginning to smear near the end of DU's useful life as a dry bearing. Over 75% of the bronze is visible at the surface.

For additional information about DU bearings, please contact Garlock Bearings Inc,
700 Mid Atlantic Parkway, Thorofare, New Jersey 08086. **(609) 848-3200** FAX: (609) 848-5115

TROUBLESHOOTING

HYDRAULIC SYSTEM

Hydraulic Pump Making Excessive Noise:

	Problem	Solution
A)	Restricted or clogged intake line	Clean line, check for contamination.
B)	Contaminated fluid	Flush system, change fluid.
C)	Restricted vent	Clean or replace air vent.
D)	Air in fluid	Check for leaks and be certain fluid suction in tank is well below hydraulic fluid in reservoir.
E)	Damaged or worn parts	Repair or replace damaged parts, check fluid for contamination.
F)	Excessive RPM	Check PTO, gears, and recommended speed to assure proper pump is installed for operation.
G)	Increased friction	Make sure pump has been assembled using correct torque values.
H)	Damaged or worn relief valve.	Replace relief valve.
I)	Damaged or worn check valve.	Replace check valve.
J)	Restricted discharge	Check to make sure relief valve is set to proper pressure.
K)	Valve system restricted	Inspect and repair or replace defective parts, check system for contamination.

Excessive Wear to Hydraulic Components:

	Problem	Solution
A)	Fluid contamination	Flush fluid system, replace with new fluid.
B)	Components misaligned	Inspect and realign.
C)	High operating pressures	Gauge and set to proper pressure.
D)	Exhausted fluid (depletion of additives)	Flush fluid system, replace with new fluid.
E)	Air in fluid	Check for leaks, and be certain fluid suction in tank is well below hydraulic fluid in reservoir.
F)	Shortened bearing life	Check alignment, insure proper lubrication to non-sealed bearings.

TROUBLESHOOTING

HYDRAULIC TONG SYSTEM

Slow Tong Speed:

	Problem	Solution
A)	Restricted supply line	Clear supply line and check intake on reservoir.
B)	Low fluid level	Add fluid to proper volume.
C)	Air leak	Locate and repair leak.
D)	Pump speed insufficient	Assure proper pump speed for application.
E)	Damaged or worn equipment	Isolate pump and check pressure to determine whether motor or pump is defective. Repair or replace defective part.
F)	Pump not primed	Check fluid viscosity and restrictions of intake line. Replace fluid if inadequate for operating temperature.
G)	Low or no flow from supply line	Check to assure couplings are securely fastened.
H)	Hydraulic bypass valve malfunction	Inspect. Adjust unloading pressure. Replace or repair as necessary.

Insufficient Torque:

	Problem	Solution
A)	Door switch malfunctioning	Check to make sure door is completely closed. Inspect door switch and dump valve. Replace or repair door switch and/or dump valve.
B)	Relief valve malfunctioning	Relief set too low, broken valve spring, contamination or defective seals.
C)	Damaged or worn pump parts	Inspect, repair, or replace.
D)	Slow pump speed	Assure proper pump speed for application.
E)	Improper system fluid	Check fluid viscosity and replace fluid if inadequate for operating temperature.
F)	Directional control valve set improperly	Check relief and directional control valve. Neutral should return slightly to reservoir.

TROUBLESHOOTING

HYDRAULIC TONG SYSTEM

Insufficient Torque:

	Problem	Solution
G)	Damage tong motor	Inspect, repair, or replace.
H)	Restriction of supply line, excessive back pressure	Check to assure couplings are securely fastened.
I)	Defective gauge or load cell	Inspect, repair, or replace. Assure unit has been calibrated to proper arm length. NOTE: When using **CLINCHER®** integral backup system, it is the length of backup arm, NOT the tong arm length.

Difficulty Shifting Gears:

	Problem	Solution
A)	Broken key in shifting yoke	Inspect and replace key stock in shifting yoke.
B)	Worn or damaged shifting yoke pins	Inspect and replace broken or worn pins.
C)	Insufficient lubrication	Pump grease into both zerts located on shift housing.
D)	Detent ball bearing spring set too tight	Inspect and relieve pressure by adjusting set screw on shifting gear PN 55084.

Failure to Grip Tubulars:

	Problem	Solution
A)	Jaws move out from neutral, but fail to penetrate pipe. Tong not perpendicular.	Inspect die size and replace with correct dies for pipe. Wrong size dies for tubulars. Assure suspension of tong is perpendicular to tubulars. Adjust hanger as necessary.
B)	Jaws fail to move out of neutral. Brake band not tight enough, faulty cam followers, rust debris or damage to jaws.	Inspect for excessive wear on brake band. Inspect and replace defective cam followers. Remove rust and debris from jaws, and jaw pockets. Inspect jaw rollers and pins for wear, flats, and lubrication. Repair, replace, and lubricate as needed.

TROUBLESHOOTING

HYDRAULIC TONG SYSTEM

Failure to Grip Tubulars:

	Problem	Solution
C)	Tong will not release from tubular. Brake band not tight enough, defective cam followers in cage plate, insufficient lubrication to jaw pin and roller.	Inspect for excessive wear on brake band. Inspect and replace defective cam followers. Remove rust and debris from jaws, and jaw pockets. Inspect jaw rollers and pins for wear, flats, and lubrication. Repair, replace, and lubricate as needed.
D)	Tong motor runs but ring gear does not rotate. Broken gears or defective shift in hydraulic tongs system.	Inspect and replace defective gears. Inspect and repair or replace defective shifting parts.
E)	Tong binds under light load. Worn or damaged cam followers, dumbell roller bearing, or idler bearing.	Inspect and replace defective parts.
F)	Ring gear rotates while control lever is in neutral.	Replace control valve.
G)	Shift will not stay in set position. Lost detent ball or spring.	Replace detent ball and spring.
H)	Hydraulic fluid leaking from motor. Damaged or worn motor shaft seal.	Replace motor shaft seal.

HYDRAULIC BACKUP SYSTEM

Failure to hold tubulars:

	Problem	Solution
A)	Incorrect die for size tubular	Check pipe OD and match die size to pipe OD.
B)	Dies have material compacted in tooth area; worn teeth.	Clean dies with wire brush and inspect. Replace with new dies if necessary.
C)	Power unit pressure set incorrectly	Inspect relief valve on power unit to make sure enough system pressure is being delivered to backup.
D)	Counter balance valve not holding pressure	Remove side plates on backup. Bench test and replace the defective counter balance valve.
E)	Internal leakage in backup cylinder	Disconnect lines and bench test cylinder. Repair or replace as necessary.
F)	Jaws will not retract. Counter balance valve is stuck.	Replace counter balance valve.
G)	External leakage of cylinder	Repair or replace cylinder.
H)	Control valve set to neutral, but jaws extend.	Inspect control valve for damage and/or incorrect spool. Repair or replace as necessary.

SECTION 7 RECOMMENDED 7 5/8" UHT TONG & 7 5/8" or 8 5/8" UHT BACKUP SPARE PARTS LIST

Part Number	***Quantity***	***Description***
12501437	1	Seal for Rineer Motor
76013	2	Standard, Low Friction & Dovetail Jaw Pins
76138	2	Standard Jaw Rollers (2 3/8" - 4 1/2")
76136	2	Standard Jaw Rollers (4 1/2" - 7 5/8")
76139	2	Low Friction Jaw Rollers (2 1/16" - 4 1/2")
58079	4	Garlock Bushings (for 76139)
76137	2	Low Friction Jaw Rollers (2 3/8" - 7 5/8")
20DU14	10	Garlock Bushings (for 76137)
76014	2	Dovetail Jaw Rollers
1001	8	1/8 NPT Zerts
SLV1000-01	1	Door Switch Assembly
45072	1	Shifting Yoke
76061A	1	Large Brake Band Assy.
76061B	1	Small Brake Band Assy.
CM7656-01 or 73064	2	7 5/8" Backup Die Clip 8 5/8" Backup Die Clip
* VA20-MRV-1 or * DVG35-HMRV	1	A-20 Relief Cartridge A-35 Relief Cartridge

* Not used/needed for CLE7625UHT-09 / BUCT8625 setup

ACCESSORIES AND OPTIONS

Several different accessory items are available for the **CLINCHER®** Tong and Backup to allow them to be customized to provide a system most appropriate for the end user's application.

CLE7625 UHT Tong Accessories

Compression Load Cell and Torque Gauge	directly measures applied torque
Tension Load Cell and Torque Gauge	directly measures applied torque
Solenoid Operated Module for Dump Valve	allows computer to limit torque applied
Adapter for Turns Proximity Switch	allows computer to sense rotation
Bail Assembly	alternative lifting system
Lift Cylinder with Integral Spring Hanger	controls vertical position
TSP-80 Tong Speed Control	allows slow speed rotation with full torque
2 Speed Motors	
Alternate Motor Displacements	

BUC7625 or BUC8625 Backup Accessories

Backup Handles	simplifies manipulation
Shipping Skids and Cages	simplify handling, transport and help guar d against damage

SECTION 9 UHT TONG ILLUSTRATIONS

7 5/8 REMOTE TONG ASSEMBLY - SHEET 1 *(Assy. No. CLE7625UHT-09)*..... 9 - 2.1
7 5/8 REMOTE TONG ASSEMBLY - SHEET 2 *(Assy. No. CLE7625UHT-09)*..... 9 - 2.2
7 5/8 TONG ASSEMBLY - SHEET 1 *(Assy. No. CLE7625UHT-02 & -08)* ..... 9 - 3
7 5/8 TONG ASSEMBLY - SHEET 2 *(Assy. No. CLE7625UHT-02 & -08)* ..... 9 - 4
GEAR HOUSING TOP VIEW ..... 9 - 5
GEAR TRAIN..... 9 - 6
DUMBELL ROLLER ASSEMBLY ..... 9 - 7
SEVERE SERVICE DUMBELL ROLLER ASSEMBLY *(Assy. No. 55158)* ..... 9 - 7.1
SEVERE SERVICE BRAKEBAND DUMBELL ROLLER *(Assy. No. 76176)* ..... 9 - 7.2
SEALED IDLER BEARING PN 1905 ..... 9 - 8
INSTALLATION INSTRUCTIONS FOR PN 1905 ..... 9 - 9
CENTER IDLER GEAR ASSEMBLY ..... 9 - 10
OUTBOARD IDLER GEAR ASSEMBLY..... 9 - 11
PINION GEAR ASSEMBLY ..... 9 - 12

SECONDARY GEAR ASSEMBLY ..... 9 - 13
SECONDARY GEAR ASSEMBLY WITH ENCODER..... 9 - 14
SHIFTING GEAR ASSEMBLY ..... 9 - 15
REMOTE SHIFT ASSEMBLY *(Assy No. 76004)* ..... 9 - 15.1
MOTOR ASSEMBLY *(Sheet 1)*..... 9 - 16
MOTOR ASSEMBLY *(Sheet 2)*..... 9 - 17
TOP CAGE PLATE ASSEMBLY ..... 9 - 18
CAGE PLATE / RING GEAR ASSEMBLY *(Assembly No. 76002)* ..... 9 - 18.1
LOCKING PIN ASSEMBLY ..... 9 - 19
BOTTOM VIEW ..... 9 - 20
TONG DOOR ASSEMBLY..... 9 - 21
DOOR SWITCH ASSEMBLY..... 9 - 22
BRAKE BAND ASSEMBLY *(Large Assy. No. 76061A, Small Assy. No. 76061B)* ..... 9 - 23
SIDE HANDLE ASSEMBLY *(Weldment No. 76156)* ..... 9 - 24
BAIL ASSEMBLY *(Assembly No. 76121)*..... 9 - 24.1
BRIDLE ASSEMBLY *(Assembly No. 55001-01)* ..... 9 - 25
ROLLER IDENTIFICATION ILLUSTRATION ..... 9 - 26

- Continued -

SECTION 9 UHT TONG ILLUSTRATIONS

7 5/8" UHT TONG JAW SET 2 1/16" thru 4 1/2" *(Assy. No. CJ-76A)* ..... 9 - 27

7 5/8" UHT TONG JAW SET 4 3/4" thru 7 5/8" *(Assy. No. CJ-76B)* ..... 9 - 28

7 5/8" UHT TONG LF JAW SET 2 1/16" thru 4 1/2" *(Assy. No. CJ-LF-76A)* ..... 9 - 29

7 5/8" UHT TONG LF JAW SET 4 3/4" thru 7 5/8" *(Assy. No. CJ-LF-76B)* ..... 9 - 30

7 5/8" UHT JAW IDENTIFICATION ILLUSTRATION ..... 9 - 31

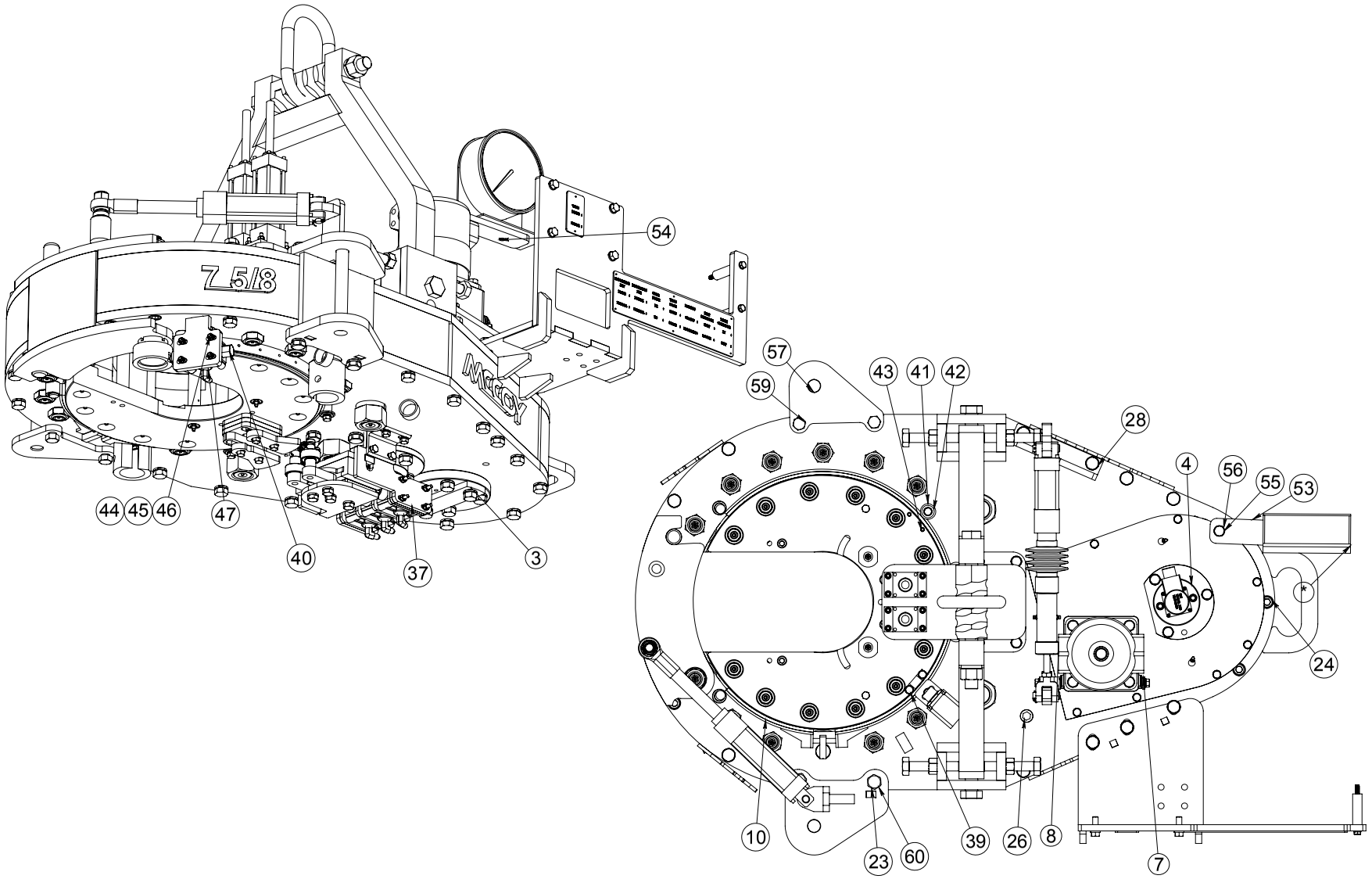
7 5/8" UHT TONG DOVETAIL JAW SET ASSEMBLY *(Assy. No. CJDT76X) (Manufacture Before 11/19/07)* ..... 9 - 32

7 5/8" UHT TONG DOVETAIL LF JAW SET ASSEMBLY *(Assy. No. CJDTLF78X) (Manufacture After 11/19/07)* ..... 9 - 33

7 5/8" UHT TONG DOVETAIL JAW SET ASSEMBLY *(Assy. No. CJDT78X) (Manufacture After 11/19/07)* ..... 9 - 34

OPEN THROAT CAM POSITIONER ASSEMBLY *(Assy. No. 73165-02)* ..... 9 - 35

DVG REMOTE VALVE MOUNT ASSEMBLY *(Assy. No. 73153)* ..... 9 - 36



7 5/8" REMOTE TONG ASSEMBLY (SHEET 1)

ASSEMBLY NO. CLE7625UHT-09

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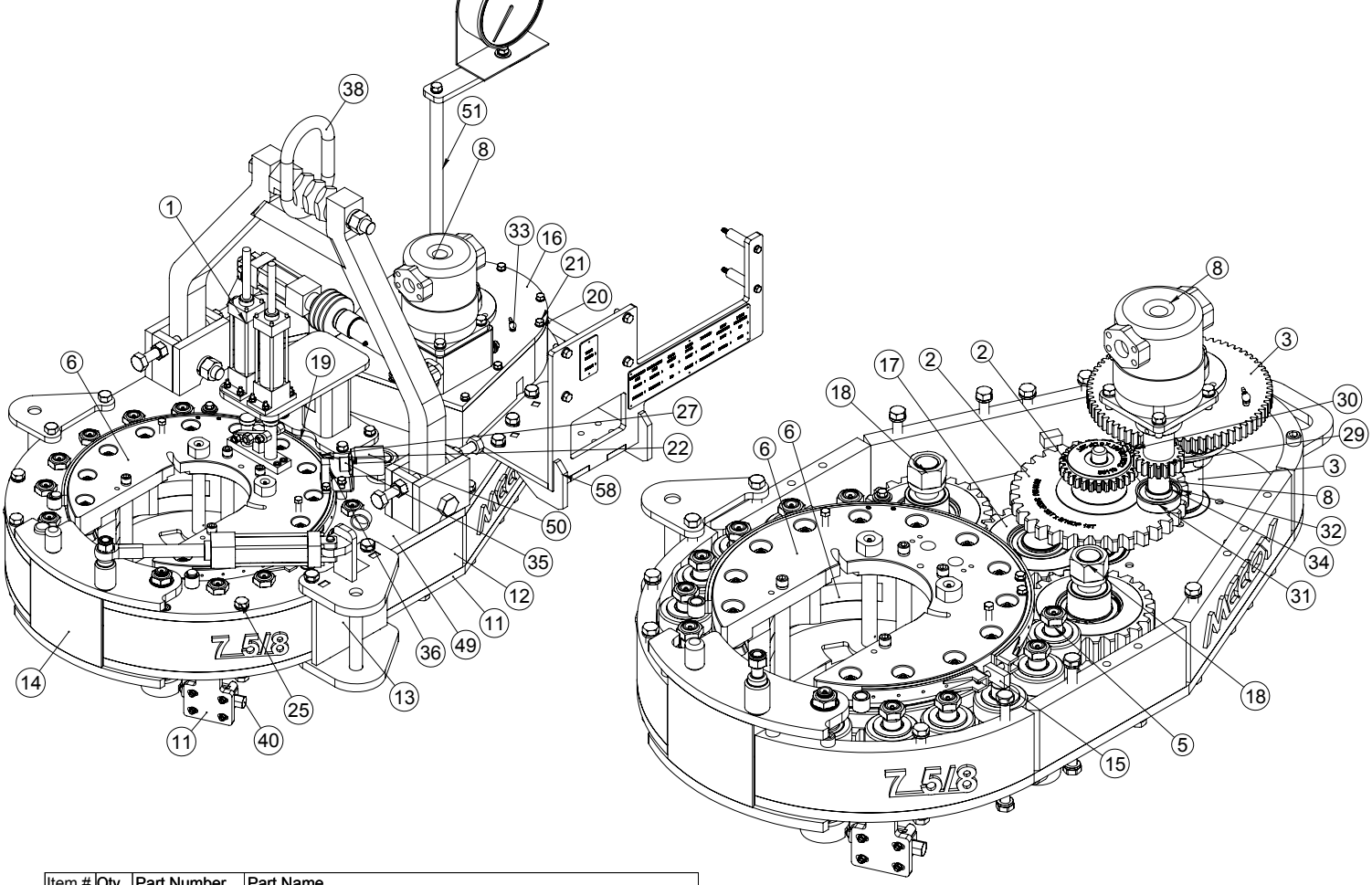

Item #	Qty.	Part Number	Part Name
1	1	14700-04	REVERSING PIN ASSEMBLY
2	1	20201	PINION GEAR ASSEMBLY
3	1	20202	SECONDARY GEAR ASSEMBLY
4	1	55142	ENCODER ASSEMBLY
5	9	55158	SEVERE SERVICE DUMBELL ROLLER ASSEMBLY
6	1	76002	CAGE PLATE/RING GEAR ASSEMBLY
7	1	76004	REMOTE SHIFT ASSEMBLY
8	1	20168	15in^3 SINGLE SPEED MOTOR ASSEMBLY
9	6	76055-S1	CAM FOLLOWER SPACER
10	2	76061	BRAKE BAND ASSEMBLY
11	1	76143-06	BOTTOM TONG PLATE WELDMENT
12	1	76171	MIDBODY WELDMENT
13	1	7617202	REMOTE DOOR CYLINDER/OPEN HANDLE ASSEMBLY
14	1	7617402	7 5/8" UHT REMOTE TONG DOOR ASSEMBLY
15	2	76176	SEVERE SERVICE BRAKE BAND DUMBELL ROLLER ASSY.
16	1	76210	LOW GEAR HOUSING COVER WELDMENT
17	1	76410	CENTER IDLER GEAR ASSEMBLY
18	2	76168	OUTBOARD IDLER ASSEMBLY
19	6	1004	3/16 DRIVE ZERT
20	16	1027	WASHER, LOCK 3/8"
21	9	1048	3/8"-16 X 1 1/4" HHCS
22	6	1150	5/8"-18 JAM NUT
23	32	1151	5/8 LW
24	9	1153	5/8"-11 X 1" SHCS
25	22	1158	5/8-11 x1 3/4 HHCS (1158)
26	2	1610	3/4 NPT FLUSH PLUG (1610)
27	6	1968	CFH 1 1/2 SB CAM FOLLOWER
28	2	201	5/8"-11 X 2 1/4" HHCS
29	1	55084-02	DRIVE GEAR
30	1	55123-ASY	HIGH GEAR IDLER ASSEMBLY

31	1	1901	BEARING
32	1	1948	INT.SNAP RING -RRT283
33	2	1002-E	1/8 NPT ZERT 45 DEG.
34	1	55085	MOTOR SPACER
35	1	NCN25-30GM50-Z7	PROXIMITY SENSOR
36	1	CRSS20094-01	CAGE PLATE SENSOR TARGET
37	1	73165-02	OPEN THROAT CAM POSITIONER ASSEMBLY
38	1	76121	RIGID BAIL ASSEMBLY F/ 7 5/8" TONGS
39	6	1047	3/8"-16 X 1" HHCS
40	1	SLV1000-01	SELF LUBRICATED CAM OPERATED PILOT VALVE ASSSEMBLY
41	4	1102	1/2" FLAT WASHER
42	3	1025	3/8 FLAT WASHER
43	2	1033	3/8"-16 X 3/4" SET SCREW
44	4	111	1/4"-20 X 2 1/2" HHCS
45	4	100	1/4"-20 HEX NUT GR8
46	4	101	1/4" LOCKWASHER
47	2	1576	90 DEG. 1/4 MNPT X 1/4 MJIC
48	1	1001	1/8 NPT ZERT
49	1	76155-06	TOP TONG PLATE WELDMENT
50	1	2209202	PROXIMITY SENSOR MOUNT
51	1	55151-S2	GAUGE MOUNT POST; BOLT-ON
52	1	55151-S3	SET SCREW, 3/8"-16 X 2"
53	1	55151-S1	GAUGE MOUNT EXTENSION
54	1	1110	1/2"-13 x 1" HHCS
55	1	1111	1/2"-13 x 1 1/4" HHCS
56	2	1103	1/2" LOCKWASHER
57	1	76156	SIDE HANDLE
58	1	73153	DVG REMOTE VALVE MOUNT ASSEMBLY
59	4	202	5/8"-11 X 2 1/2" HHCS
60	4	204	5/8"-11 X 3" HHCS

7 5/8" REMOTE TONG (SHEET 2)

ASSEMBLY NO. CLE7625UHT-09

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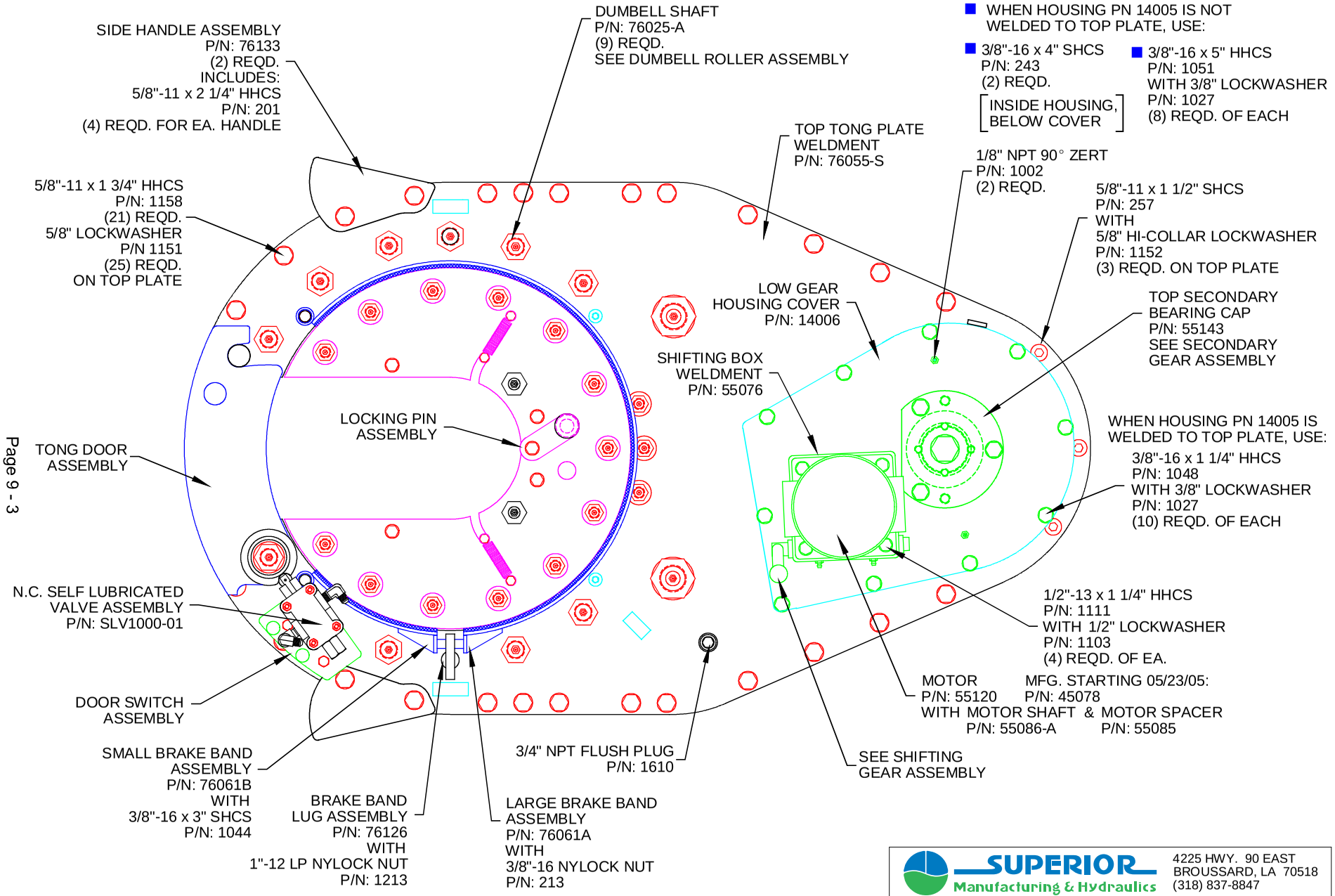

TOP VIEW

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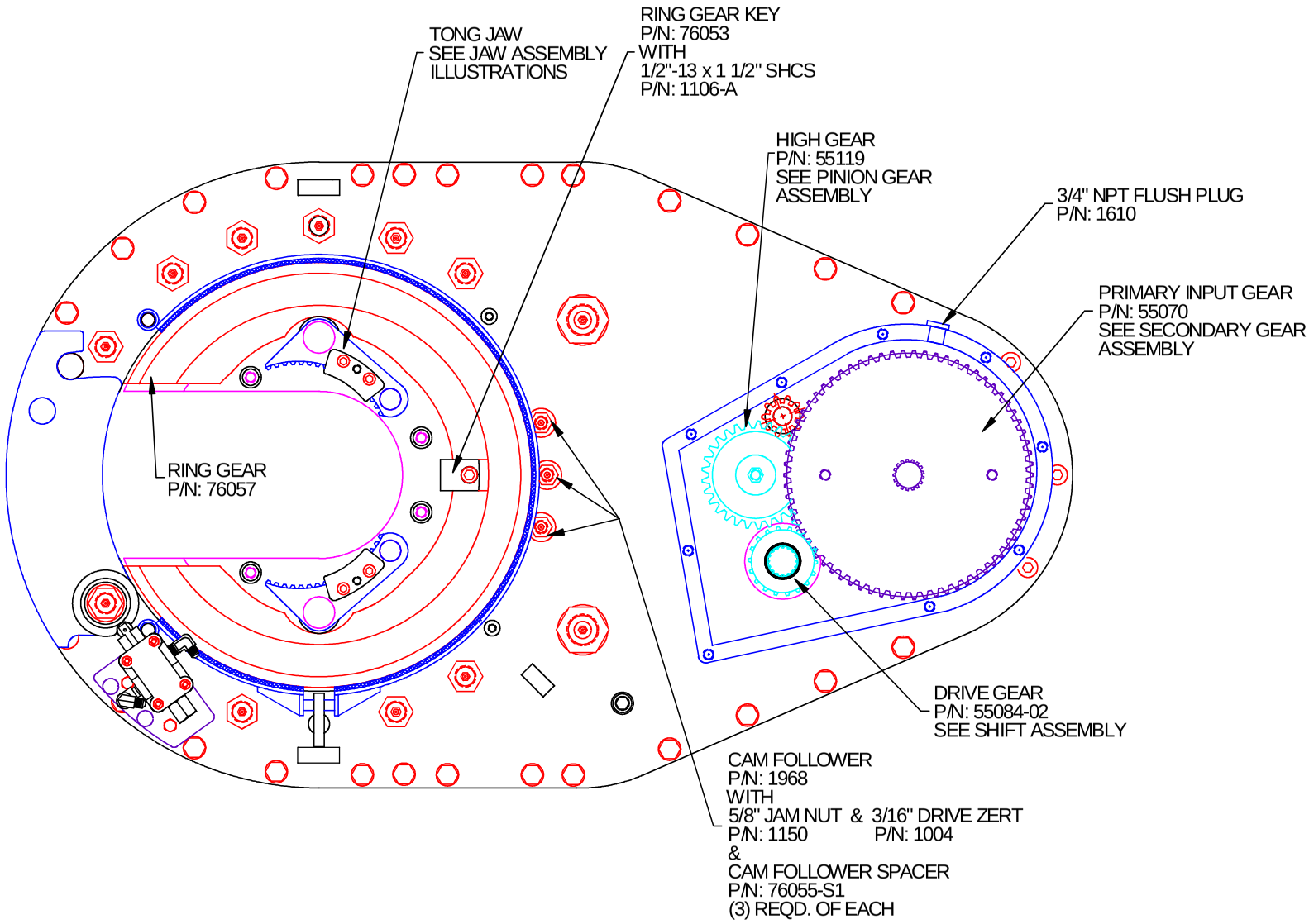

TOP VIEW

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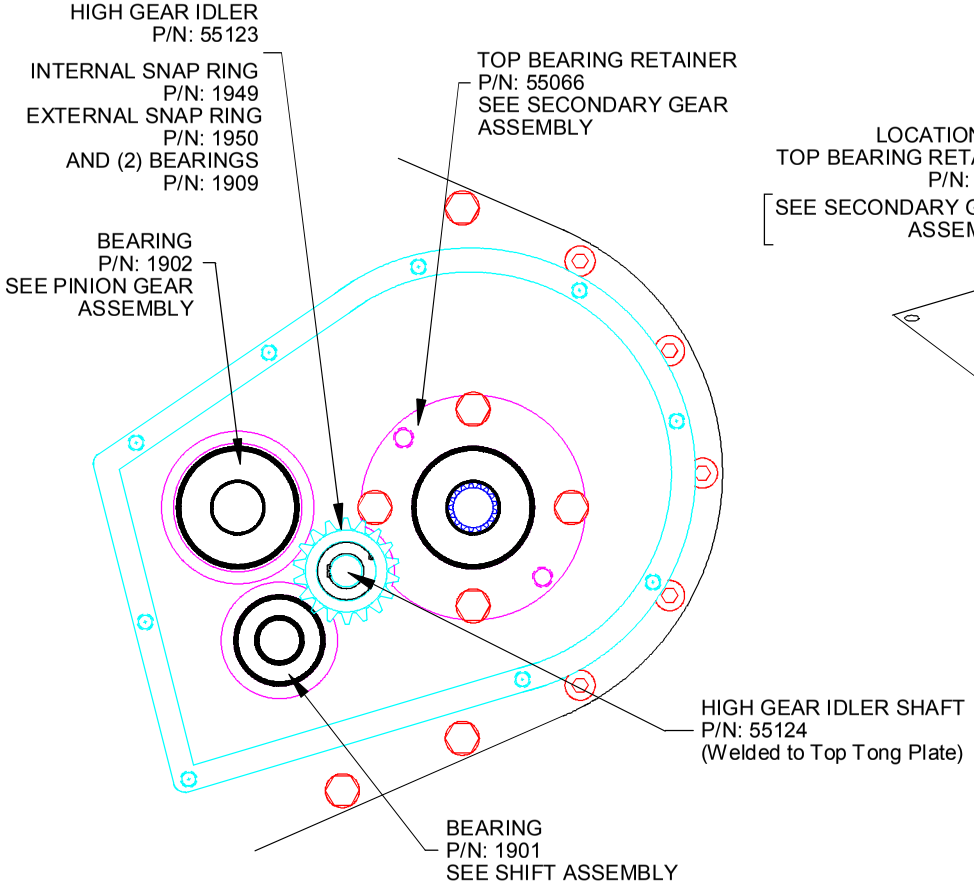
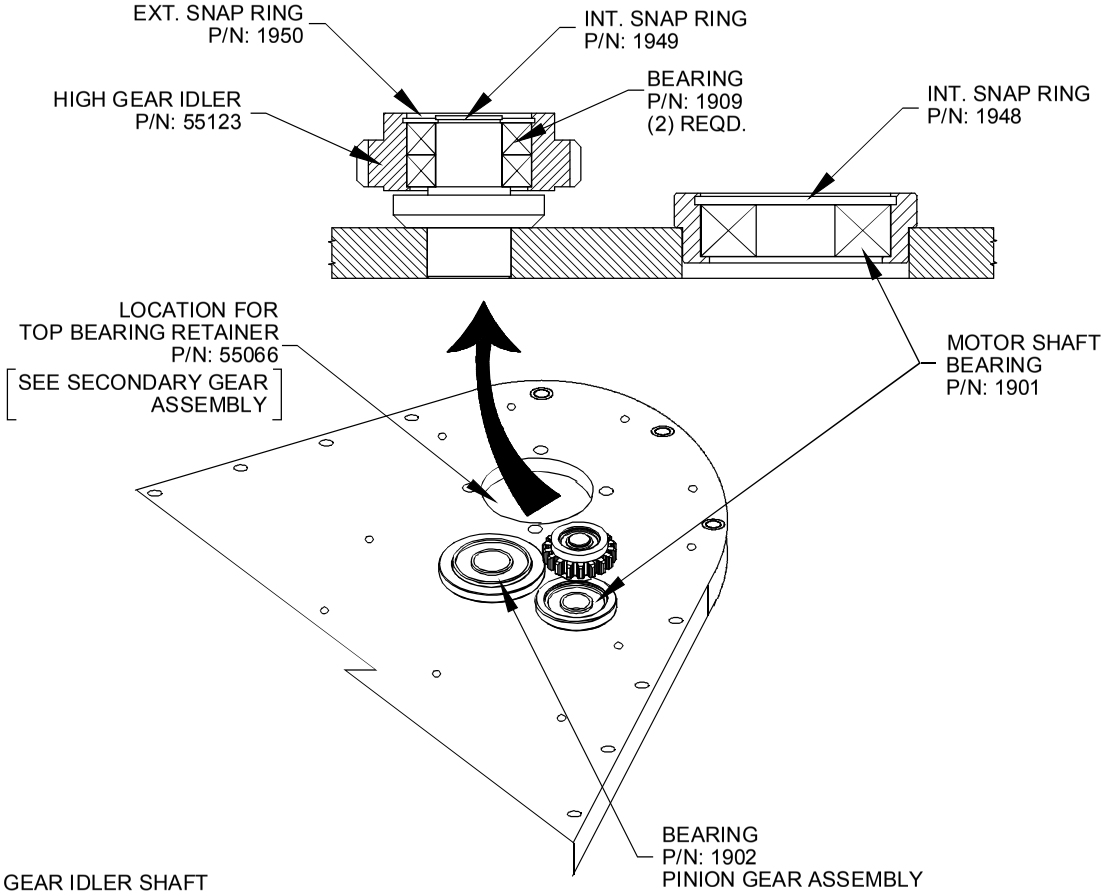


NOTE: DRAWING SHOWN WITHOUT
UPPER LOW PINION GEAR &
DRIVE GEAR



NOTE: DRAWING SHOWN WITHOUT
LOW GEAR HOUSING

GEAR HOUSING TOP VIEW

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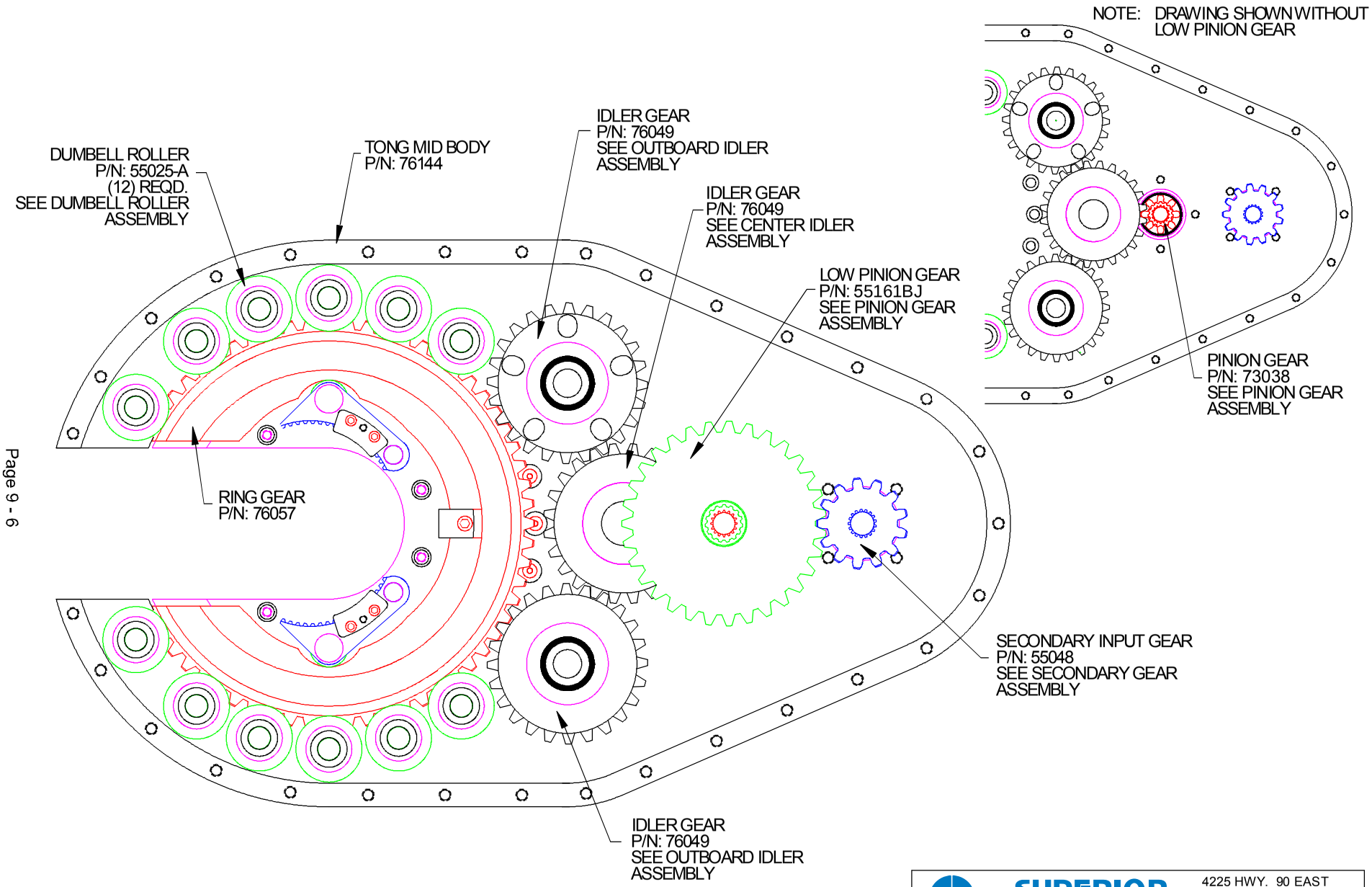

GEAR TRAIN

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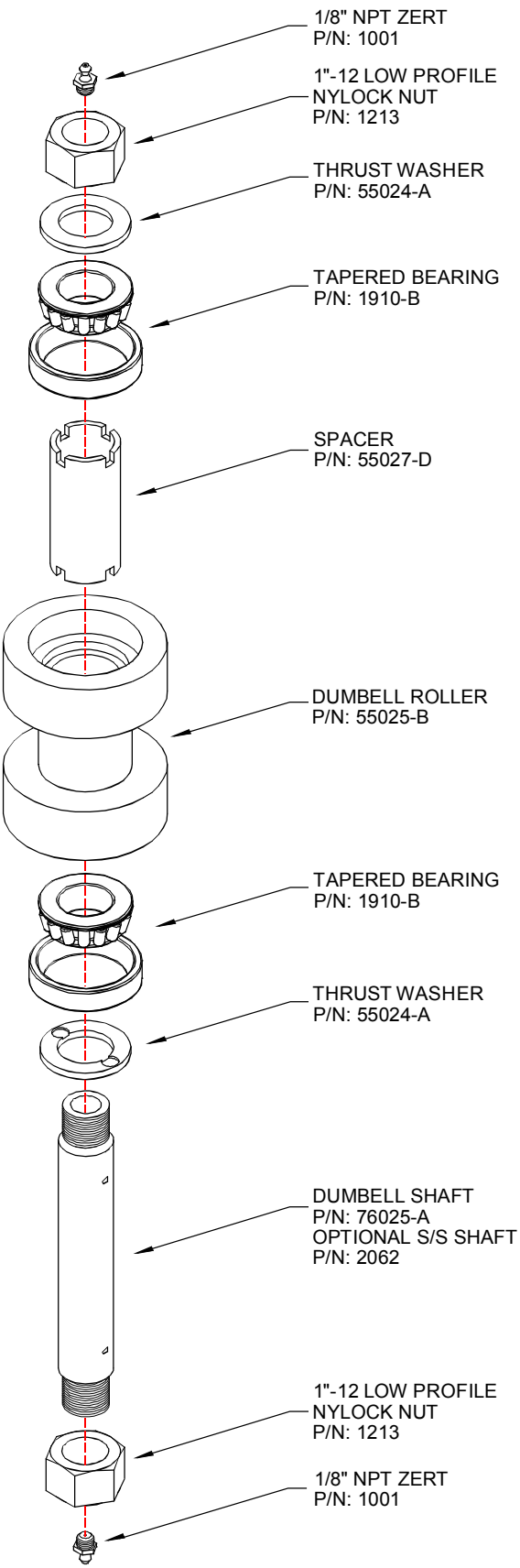

DUMBELL ROLLER ASSEMBLY

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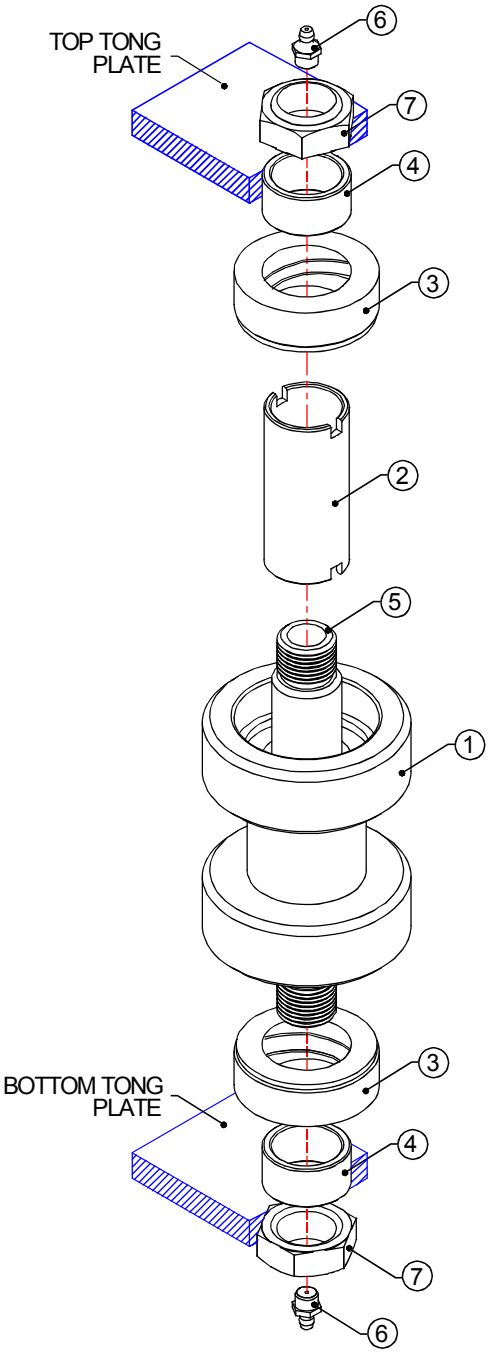
Item #	Qty.	Part Number	Part Name
1	1	55025-B	DUMBELL ROLLER
2	1	55027-D	DUMBELL ROLLER SPACER
3	2	55191	DUMBELL ROLLER BUSHING
4	2	55192	DUMBELL ROLLER SPACER
5	1	76025-A	DUMBELL ROLLER SHAFT
6	2	1001	1/8 NPT ZERT
7	2	1213	1"-12 LOW PROFILE NYLOCK NUT



SEVERE SERVICE
DUMBELL ROLLER ASSEMBLY

ASSEMBLY NO. 55158

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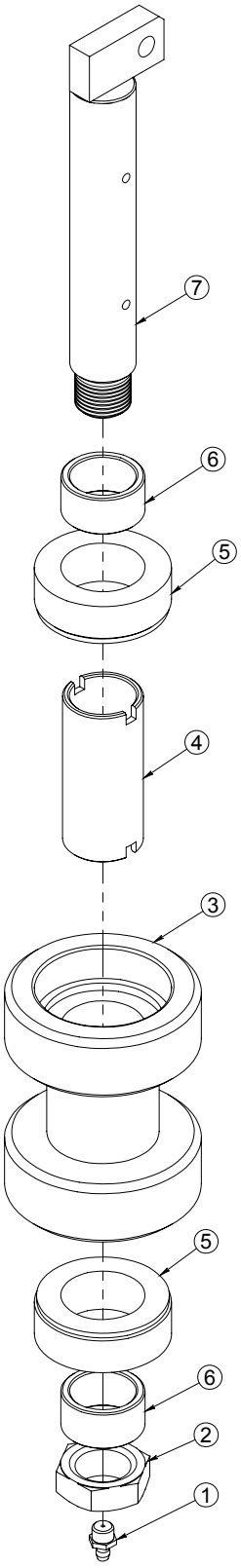

Item #	Qty.	Part Number	Part Name
1	1	1001	1/8 NPT ZERT
2	1	1213	1"-12 LOW PROFILE NYLOCK NUT
3	1	55025-B	DUMBELL ROLLER
4	1	55027-D	DUMBELL ROLLER SPACER
5	2	55191	DUMBELL ROLLER BUSHING
6	2	55192	DUMBELL ROLLER SPACER
7	1	76126	BRAKE BAND LUG WELDMENT

SEVERE SERVICE BRAKEBAND DUMBELL ROLLER ASSY.

ASSEMBLY NO. 76176

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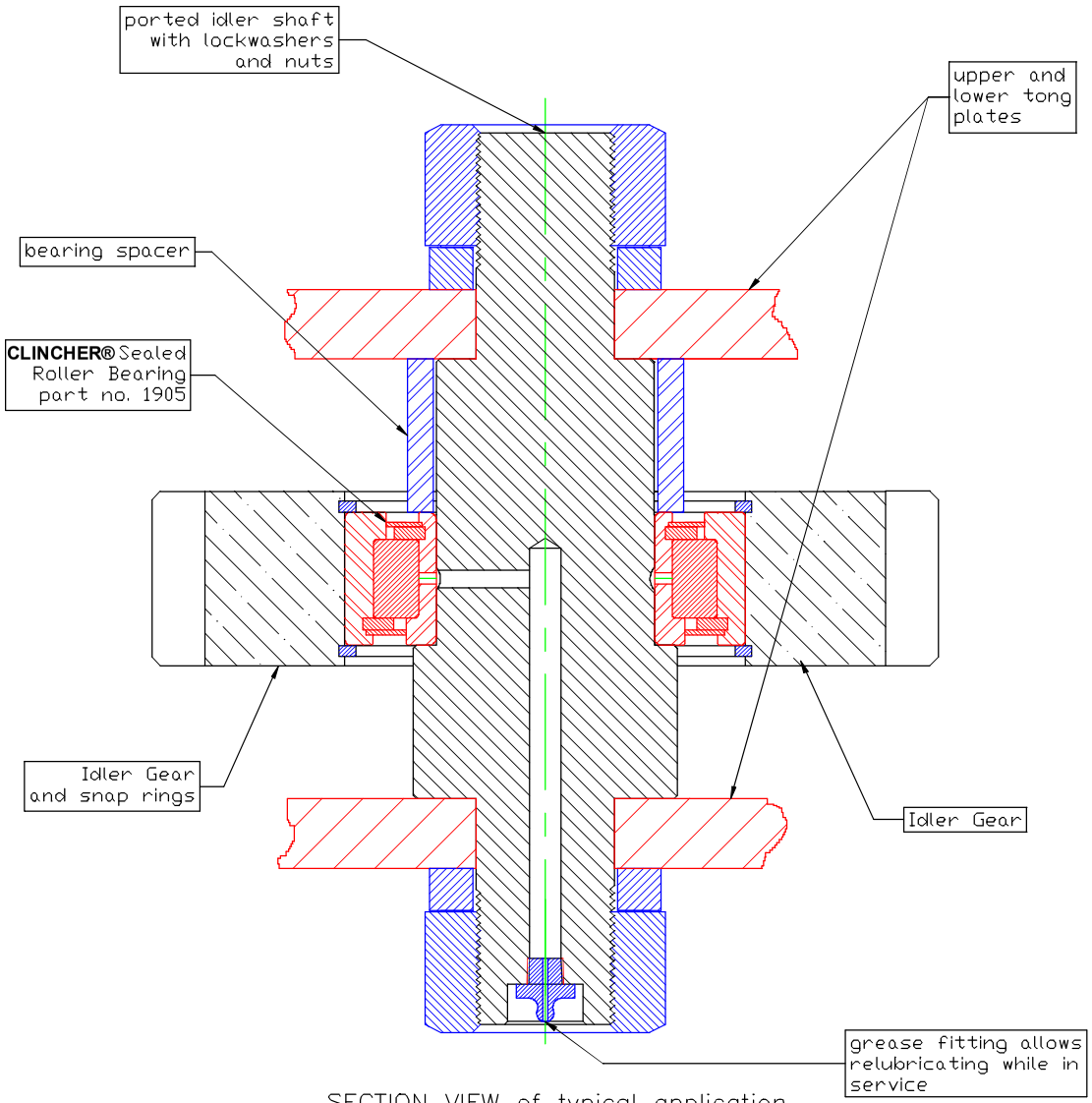
Features and Benefits:
Proprietary sealed bearing with full compliment roller design offers greater load ratings than commercially available sealed ball bearings. The ported inner race allows the bearing to be relubricated without disassembly. Integral elastomeric seals allow grease to be displaced but prevent migration of contaiminants into bearing.

Elastomeric seals are corrosion resistant and suitable for use in environments which are incompatible with traditional aluminum bearing shrouds.

Unique geometric design allows rollers to absorb thrust loads to maximize component life.

Nominal OD: 4.3307 inches
Nominal ID: 2.3622 inches
Nominal Ht: 1.4375 inches
static rating: 37540 lbs
dynaminc rating: 29230 lbs
(1mm cycles, 33 1/3 RPM f/ 500 hrs.)


ported idler shaft with lockwashers and nuts
upper and lower tong plates
bearing spacer
CLINCHER® Sealed Roller Bearing part no. 1905
Idler Gear and snap rings
Idler Gear
grease fitting allows relubricating while in service

SECTION VIEW of typical application

Rev.#	By	Log#	Description of Revision
3			
2			
1	DB	12/07/02	added desc of thrust load capability

UNLESS OTHERWISE SPECIFIED TOLERANCES ARE — R3

2 PLACE DEC. ±.020	3 PLACE DEC. ±.005	FRACTIONS ± 1/16	ANGLES ± .5°	SURFACE 250	FLATNESS AR PL. ± .015 per foot

1. Dimensions are in inches
2. Remove burrs & sharp edges with 1/64x45°max.
3. Machined fillet radii are 1/32
4. Normality,Squareness & parallelism of machine surfaces are .002 per inch, to a max of .012 inches for a single surface.
5. Machine diameters on a common centerline must be concentric within .005 T.I.R & unmachined diameters concentric within .032 T.I.R

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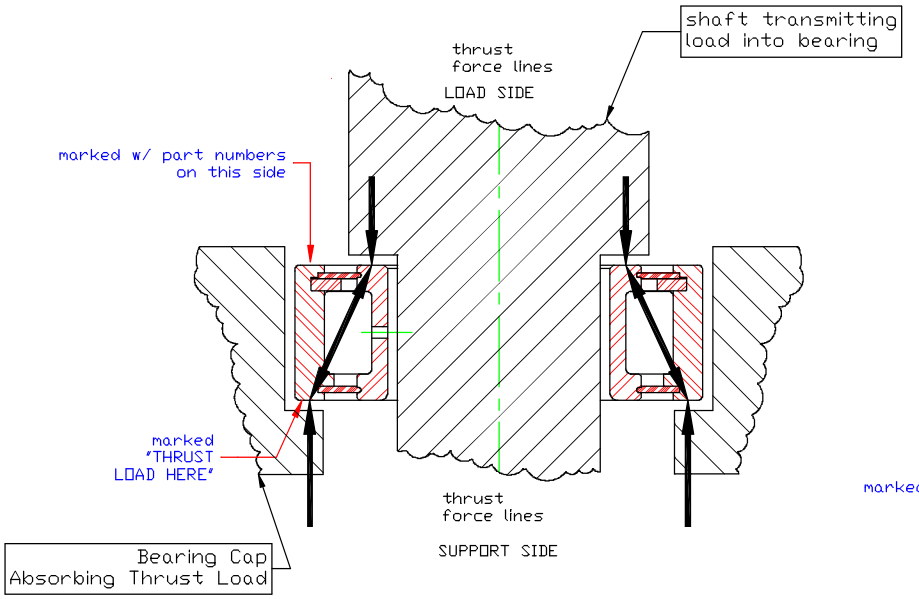
△1 or ⟨1⟩ = Revision Number
1.000 = Critical Dimension 100% Inspection Required

SHEET 1 of 2

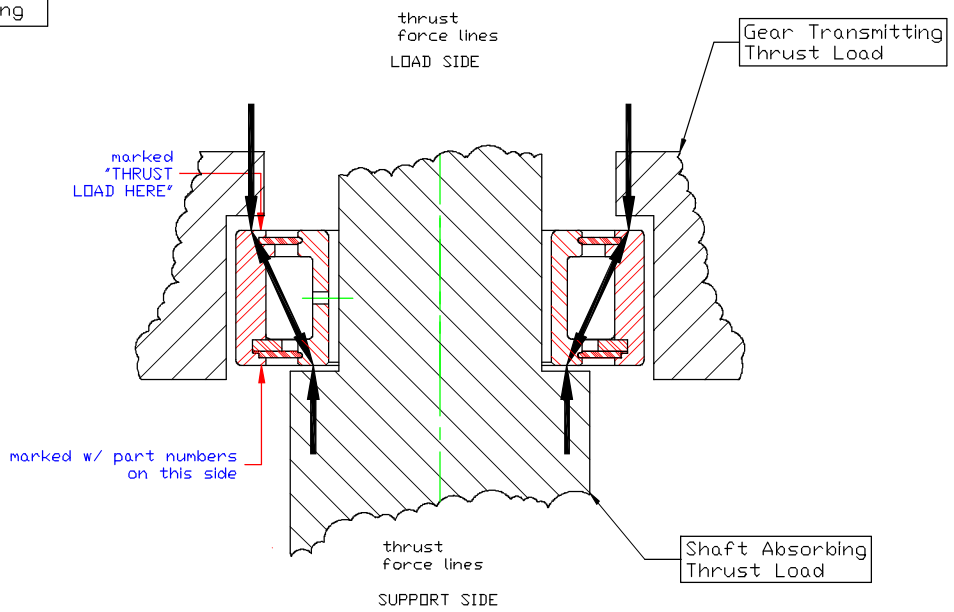
SUPERIOR Manufacturing & Hydraulics
4225 HWY.90 E
BROUSSARD,LA 70518
(318)837-8847

PART NAME: SEALED IDLER BEARING

PART #: 1905	MATERIAL SPECIFICATION
DRAWN BY:	Matl.Req:
APPROVED BY:	Initial Condition:
CHK BY: DATE:	Alternative Matl:
REF: REF ILL1000/ILL1142.DWG	H.T Instructions: Case Depth: C.D



Bottom Bearing Cap Application



Gear Support Application

Installation instructions for **CLINCHER®** BEARING Part Number 1905

Rev.#	By	Log#	Description of Revision
3			
2			
1	DB	12/07/02	added desc of thrust load capability

UNLESS OTHERWISE SPECIFIED TOLERANCES ARE — R3

2 PLACE DEC. ±.020	3 PLACE DEC. ±.005	FRACTIONS ± 1/16	ANGLES ± .5°	SURFACE 250	FLATNESS AR PL. ± .015 per foot

1. Dimensions are in inches
2. Remove burrs & sharp edges with 1/64x45°max.
3. Machined fillet radii are 1/32
4. Normality,Squareness & parallelism of machine surfaces are .002 per inch, to a max of .012 inches for a single surface.
5. Machine diameters on a common centerline must be concentric within .005 T.I.R & unmachined diameters concentric within .032 T.I.R

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△1 or ⟨1⟩ = Revision Number

1.000 = Critical Dimension 100% Inspection Required

SHEET 2 of 2

SUPERIOR Manufacturing & Hydraulics
4225 HWY.90 E
BROUSSARD,LA 70518
(318)837-8847

PART NAME: Installation instructions for P/N 1905 SEALED IDLER BEARING

PART #: 1905

DRAWN BY:

APPROVED BY:

CHK BY: DATE:

REF: REFILL1000/ILL1142.DWG

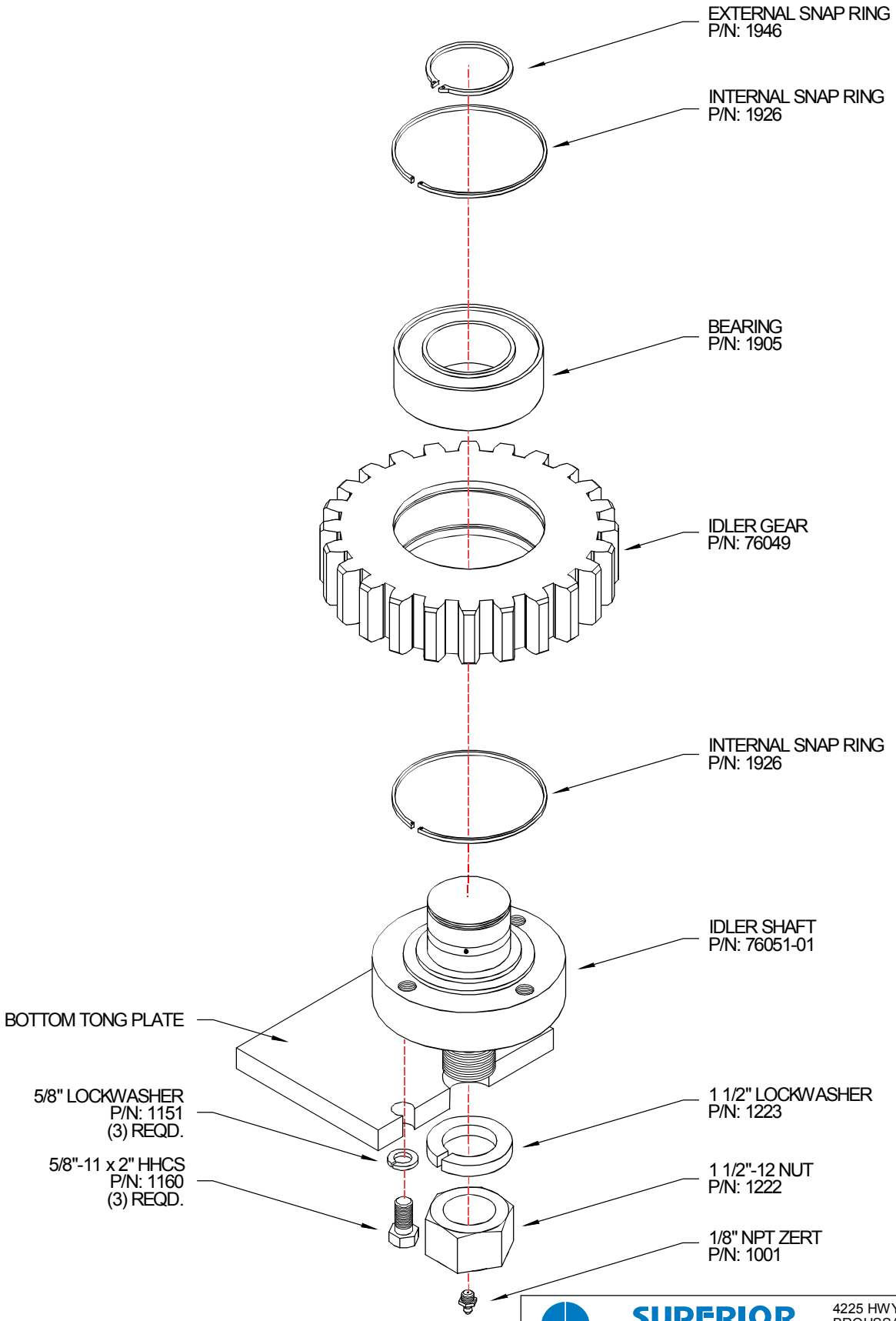
MATERIAL SPECIFICATION

Matl.Req:

Initial Condition:

Alternative Matl:

H.T Instructions: Case Depth: C.D



CENTER IDLER GEAR ASSEMBLY

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BROUSSARD, LA 70518
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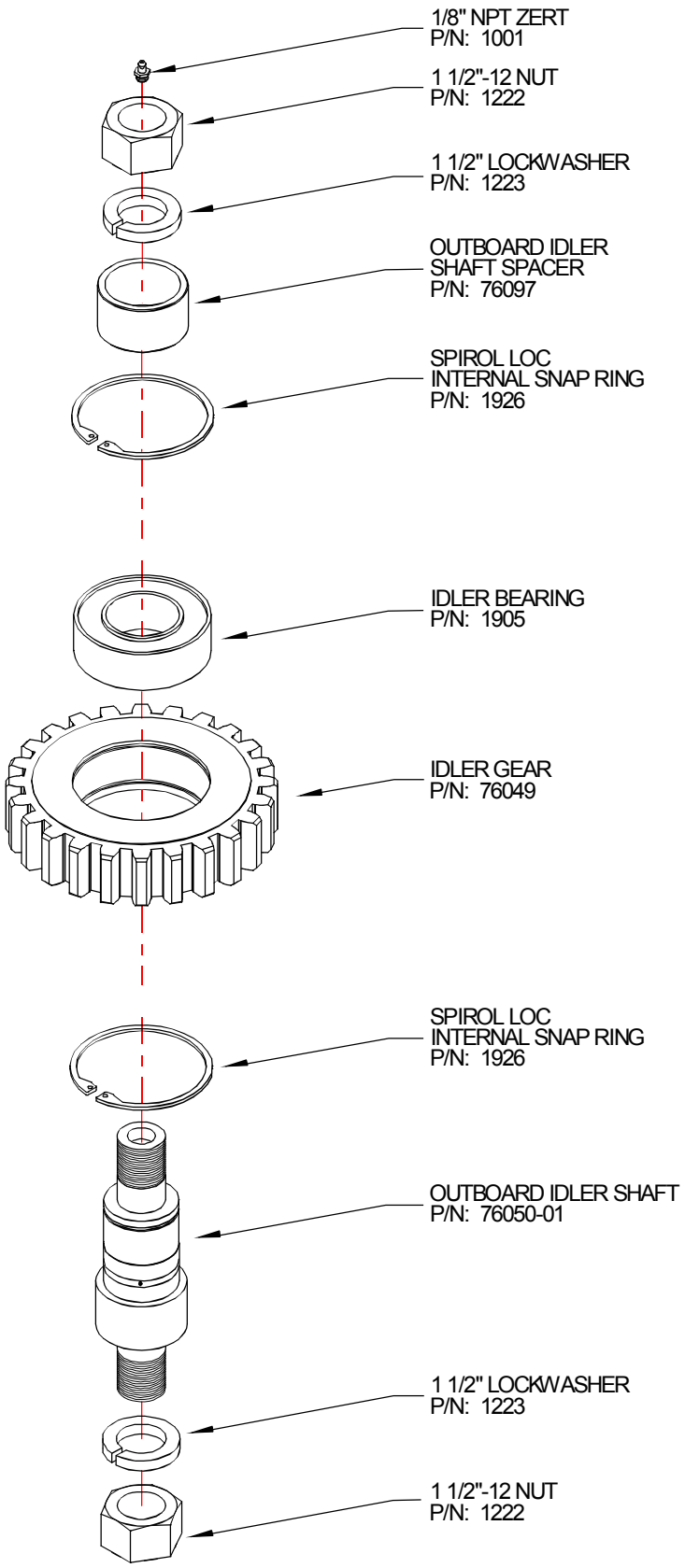
REV. #	LOG #	DATE
		10/19/04

REF: S:\Equip Manuals-Dwgs\CLE7625UHT-02\Idler Gear.wpg



OUTBOARD IDLER GEAR ASSEMBLY

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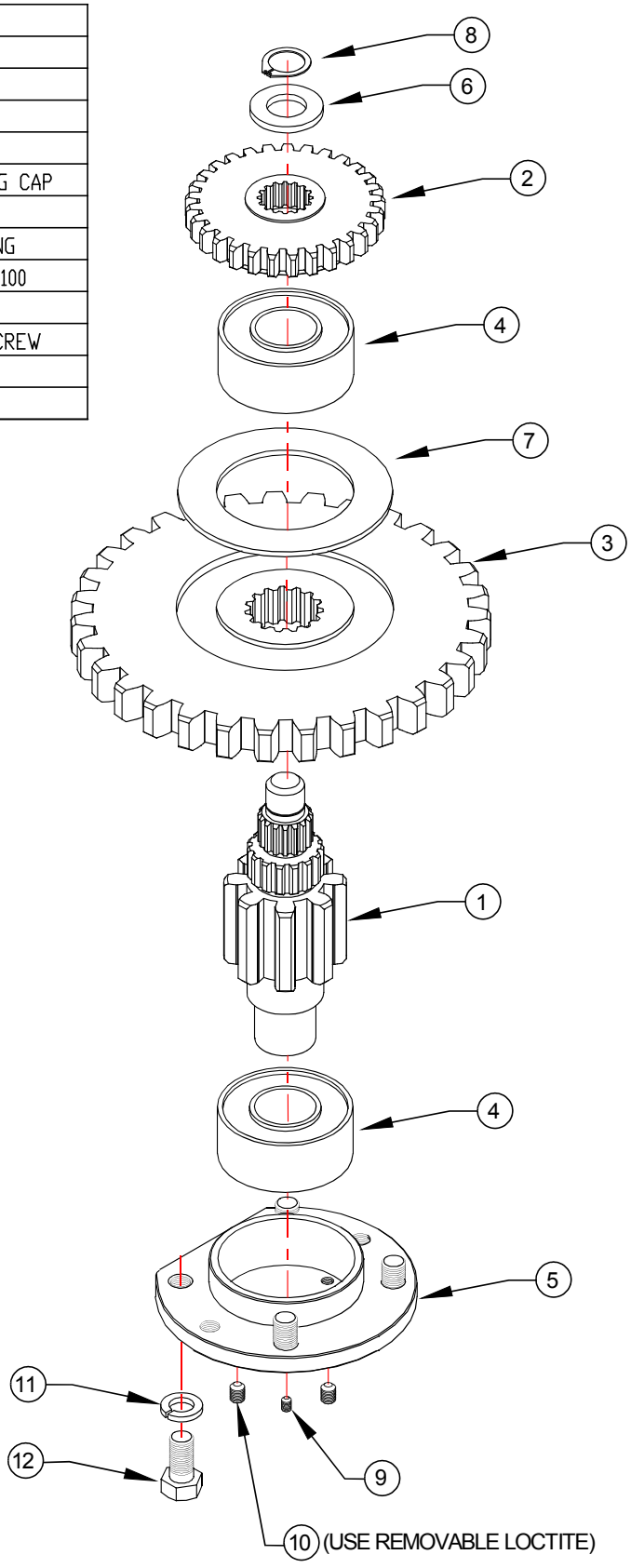
		10/19/04
REV. #	LOG #	DATE

REF: S:\Equip Manuals-Dwgs\CLE7625JHT-02\Outboard Idler .wpg

Item #	Qty.	Part Number	Part Name
1	1	73038	PINION GEAR
2	1	55119	HIGH GEAR
3	1	55161BJ	LOW PINION GEAR
4	2	1902	BEARING
5	1	55036	BOTTOM PINION BEARING CAP
6	1	55122-01	HIGH GEAR RETAINER
7	1	55047-1	PINION BEARING BUSHING
8	1	1950	EXT.SNAP RING -N5100-100
9	1	1607	1/8" FLUSH PLUG
10	2	1029	3/8"-16 X 1/2" SET SCREW
11	4	1151	5/8 LW
12	4	1156	5/8"-11 X 1 1/4" HHCS



PINION GEAR ASSEMBLY

ASSEMBLY NO. 20201

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REV. #	LOG #	DATE
2		09/13/05

REF: S:\Equip Manuals-Dwgs\CLE2000-07\Pinion Gear rev2.wpg

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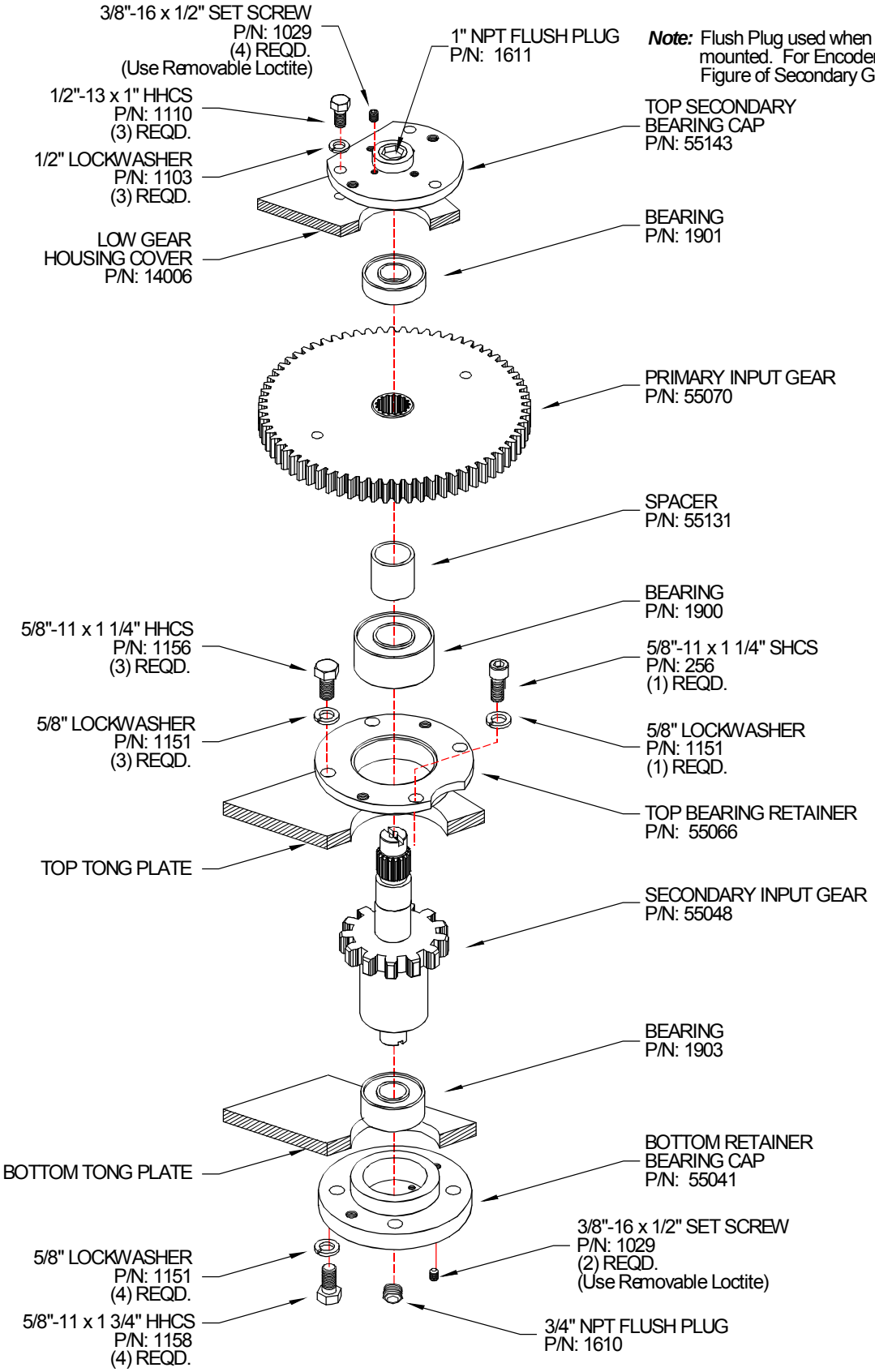

SECONDARY GEAR ASSEMBLY

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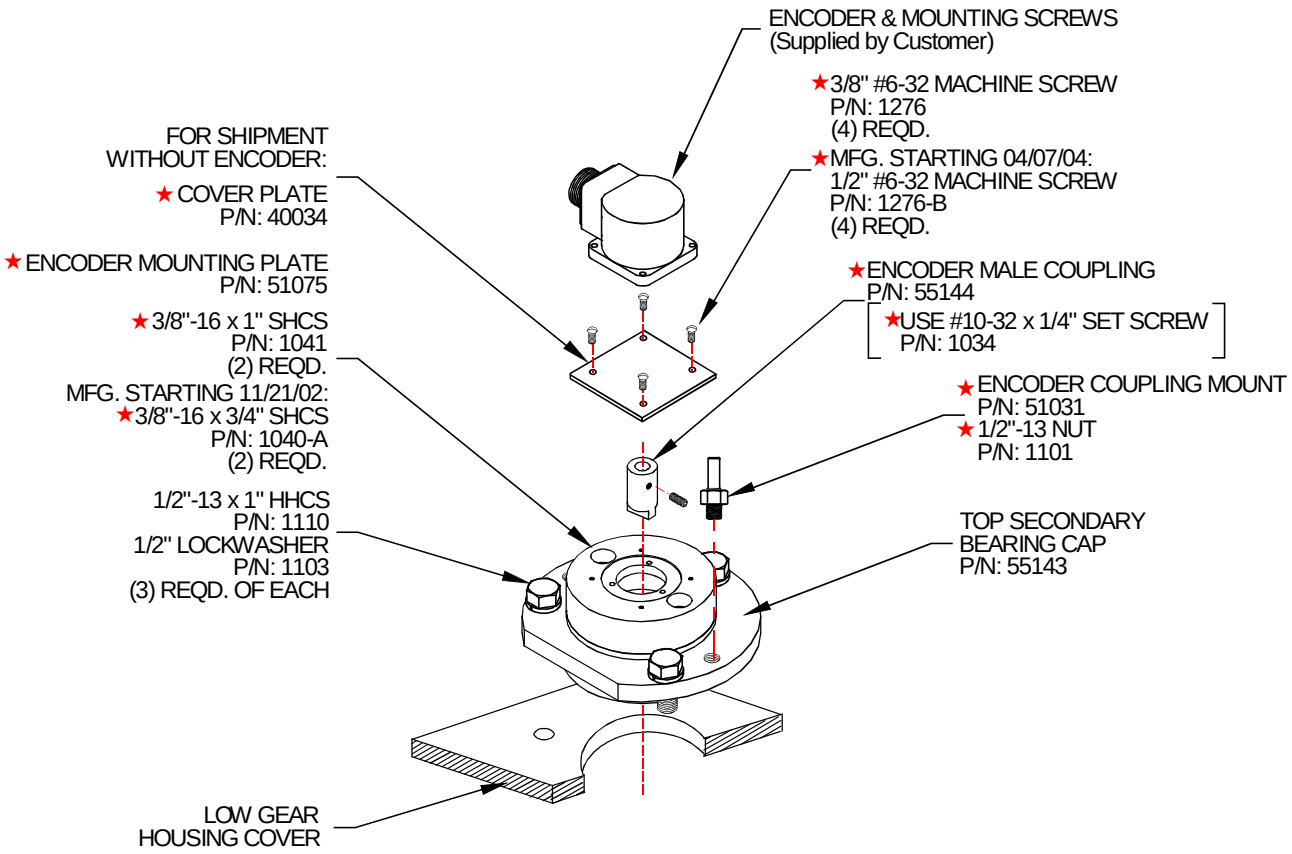
		10/19/04
REV. #	LOG #	DATE

REF: S:\Equip Manuals-Dwgs\CLE7625UHT-02\Secondary Gear.wpg



ENCODER ASSEMBLY

ENCODER ASSEMBLY NO. 55142 ★

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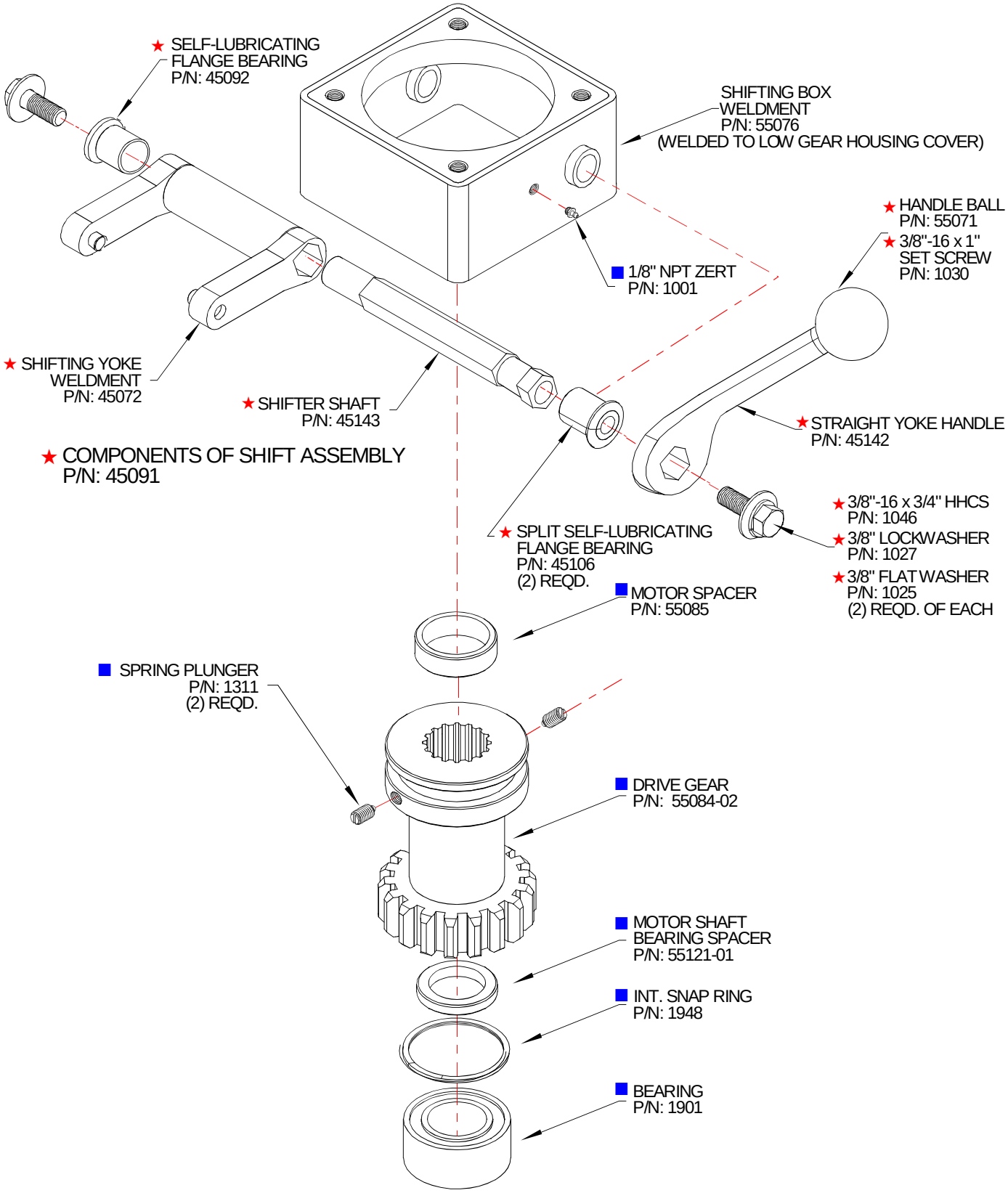
REV. #	LOG #	DATE
2		12/09/04

REF: S:\Equip Manuals-Dwgs\CLE5500\Encoder rev2.wpg


★ SELF-LUBRICATING FLANGE BEARING P/N: 45092
SHIFTING BOX WELDMENT P/N: 55076 (WELDED TO LOW GEAR HOUSING COVER)
★ HANDLE BALL P/N: 55071
★ 3/8"-16 x 1" SET SCREW P/N: 1030
■ 1/8" NPT ZERT P/N: 1001
★ SHIFTING YOKE WELDMENT P/N: 45072
★ SHIFTER SHAFT P/N: 45143
★ COMPONENTS OF SHIFT ASSEMBLY P/N: 45091
★ STRAIGHT YOKE HANDLE P/N: 45142
★ 3/8"-16 x 3/4" HHCS P/N: 1046
★ 3/8" LOCKWASHER P/N: 1027
★ 3/8" FLAT WASHER P/N: 1025 (2) REQD. OF EACH
★ SPLIT SELF-LUBRICATING FLANGE BEARING P/N: 45106 (2) REQD.
■ MOTOR SPACER P/N: 55085
■ SPRING PLUNGER P/N: 1311 (2) REQD.
■ DRIVE GEAR P/N: 55084-02
■ MOTOR SHAFT BEARING SPACER P/N: 55121-01
■ INT. SNAP RING P/N: 1948
■ BEARING P/N: 1901

SHIFT GEAR ASSEMBLY

ASSEMBLY NO. 26078 ■

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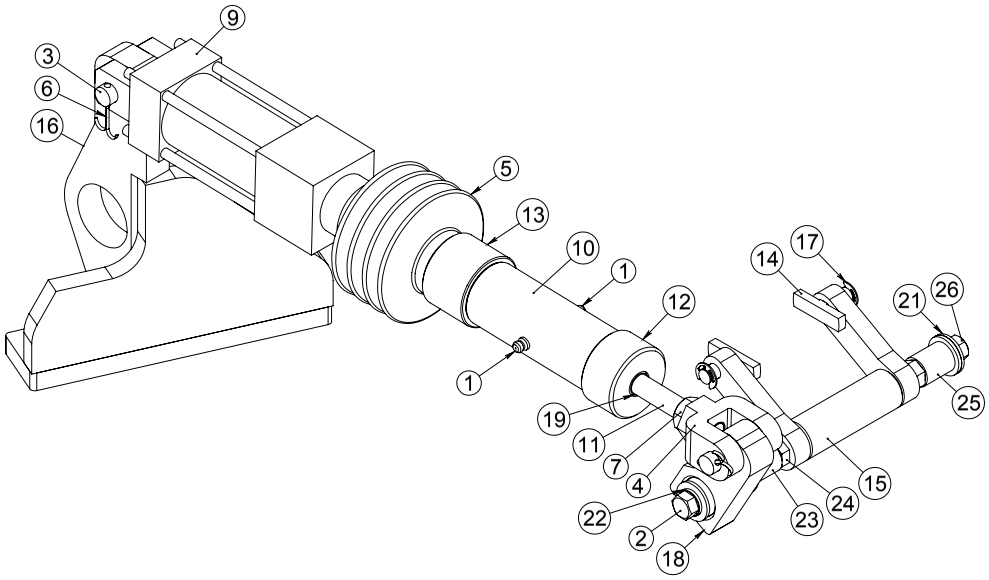
REV. #	LOG #	DATE
4		09/13/05

REF: P:\Manuals\Equip Manuals\Dwgs\CLE14000DP\Shift Assy 2nd rev4.wpg



Item #	Qty.	Part Number	Part Name
1	2	1004	3/16 DRIVE ZERT
2	1	1071	3/8"-16 X 3 1/2" HHCS
3	2	10041	CLEVIS PIN (Reid # CLP-172S)
4	1	1099	ROD CLEVIS (RC-0605
5	1	14018	ROD BOOT
6	2	1252B	1/8 x 1 SS COTTER PIN
7	1	270-B	1/2"-20 JAM NUT
8	1	2046	1/2" x 5/8 DU BEARING (2046)
9	1	2047	REMOTE SHIFT CYLINDER (LH-1_1_2-B02-2-1-P 1)
10	1	2079	SPRING HOUSING
11	1	2080-01	PISTON ROD
12	1	2081	FRONT END CAP
13	1	2082	REAR END CAP
14	2	45164	SHIFTING YOKE BEARING PIN
15	1	45072-01	SHIFTING YOKE WELDMENT
16	1	76005	SHIFT CYL. MOUNTING BRACKET
17	2	73065	E-TYPE RETAINER RING
18	1	76170	SHIFT ARM WELDMENT
19	1	959-1	1/2" ROD WIPER
20	80	BUCS4024	BELVILLE SPRING
21	2	1025	3/8 FLAT WASHER
22	2	1027	WASHER, LOCK 3/8"
23	2	45106-A	SPLIT SELF-LUB. FLANGE BEARING.
24	1	45143	SHIFTER SHAFT
25	1	45092	5/8 x 3/4 SELF-LUB. FLANGE BEARING (FF-703-1)
26	1	1046	HHCS 3/8-16 X 3/4

REMOTE SHIFT ASSEMBLY

ASSEMBLY NO. 76004

MCCOY | DRILLING & COMPLETIONS
MOVING GLOBAL ENERGY FORWARD
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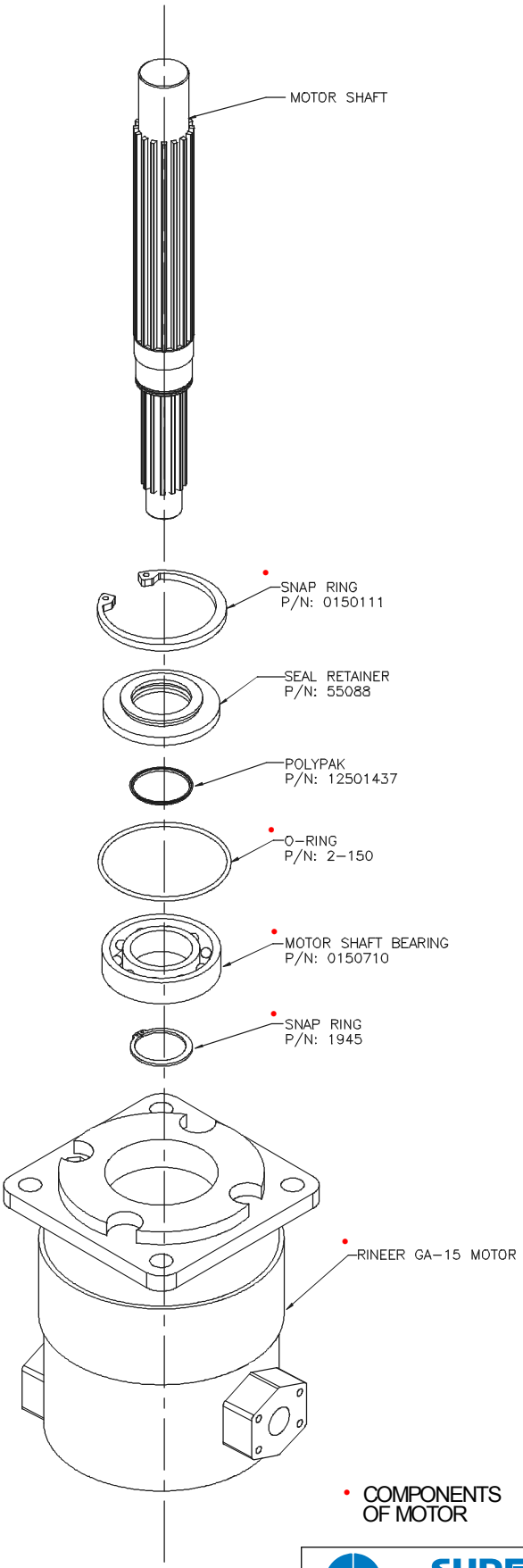
REV. #	LOG #	DATE



MOTOR ASSEMBLY

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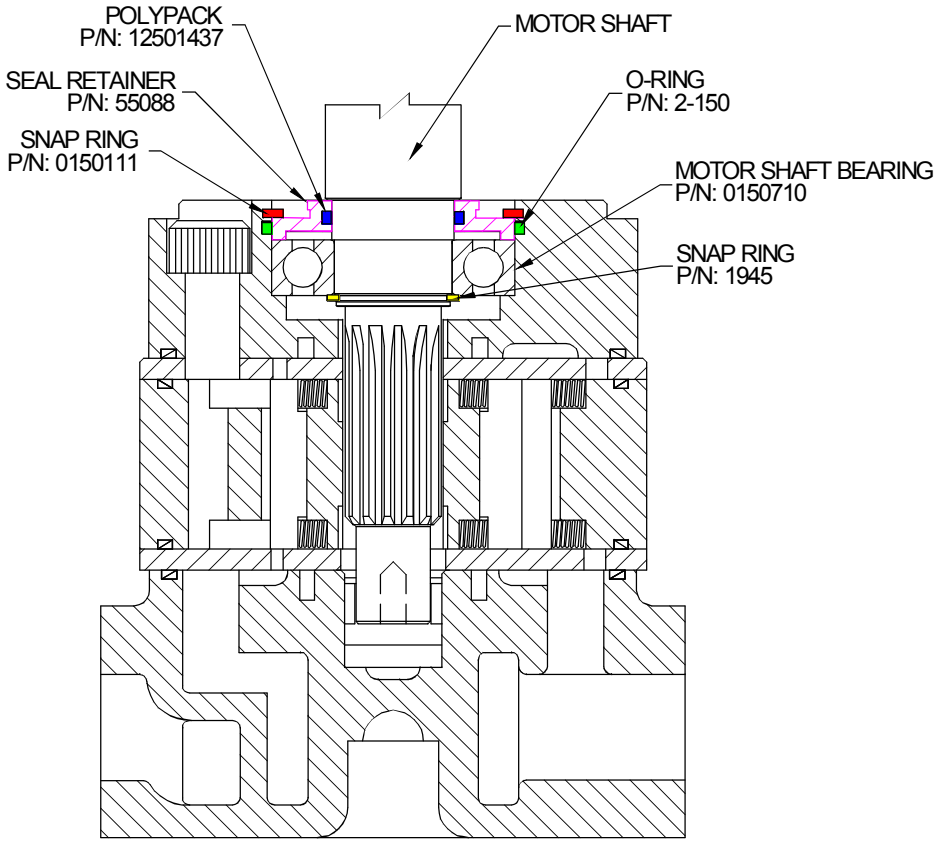
		06/07/02
REV. #	LOG #	DATE

REF: S:\Equip Manuals-Dwgs\Motor\Motor CLE5500+ sht1.wpg



W/ OUT WIPER RING

MOTOR ASSEMBLY

FOR CLARITY PURPOSE ONLY
NOT TO SCALE

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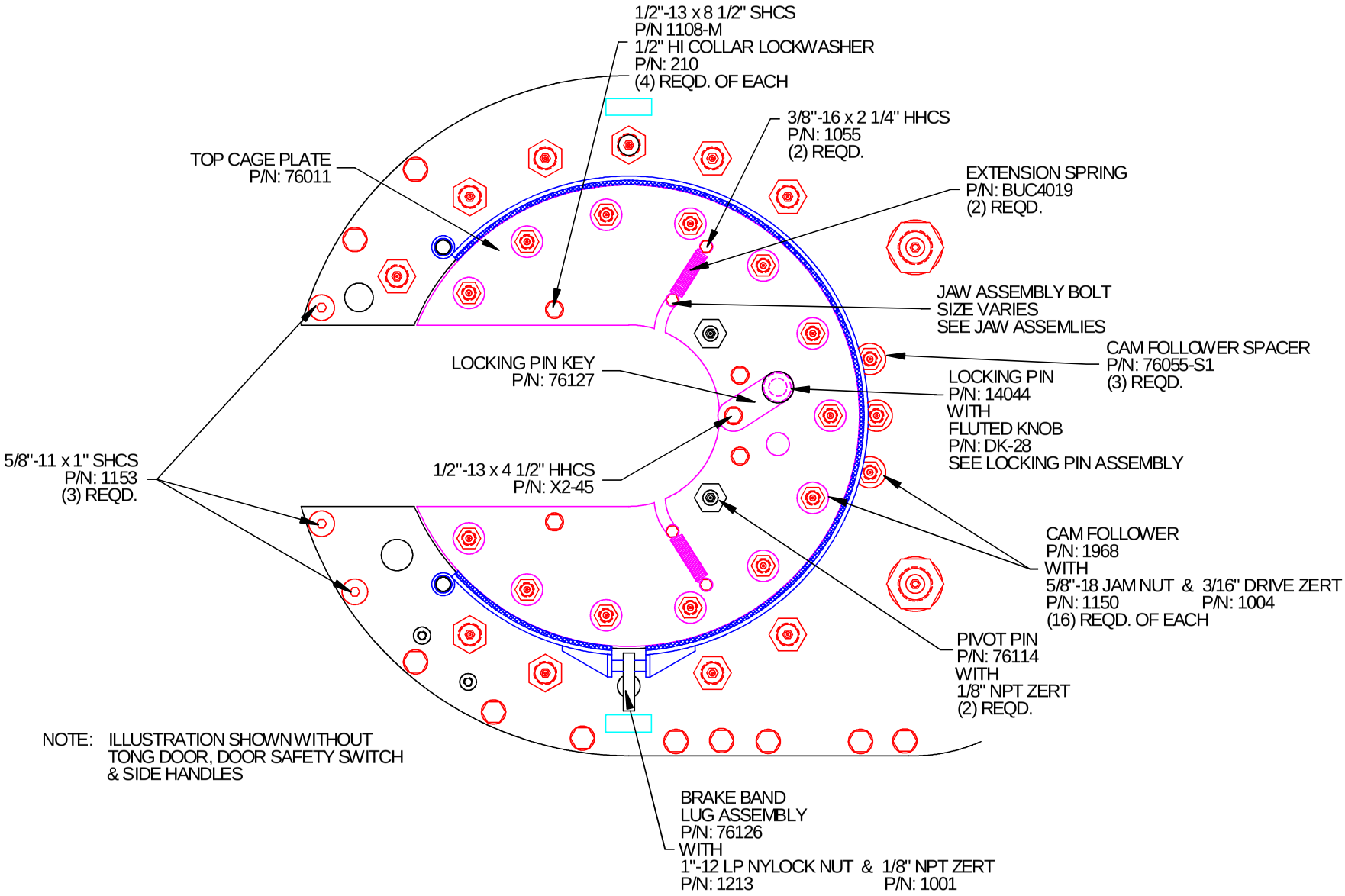
REV. #	LOG #	DATE
2		04/29/03

REF: S:\Equip Manuals-Dwgs\Motor\Mobr CLE5500+ sht2 rev2.wpg



TOP CAGE PLATE ASSEMBLY

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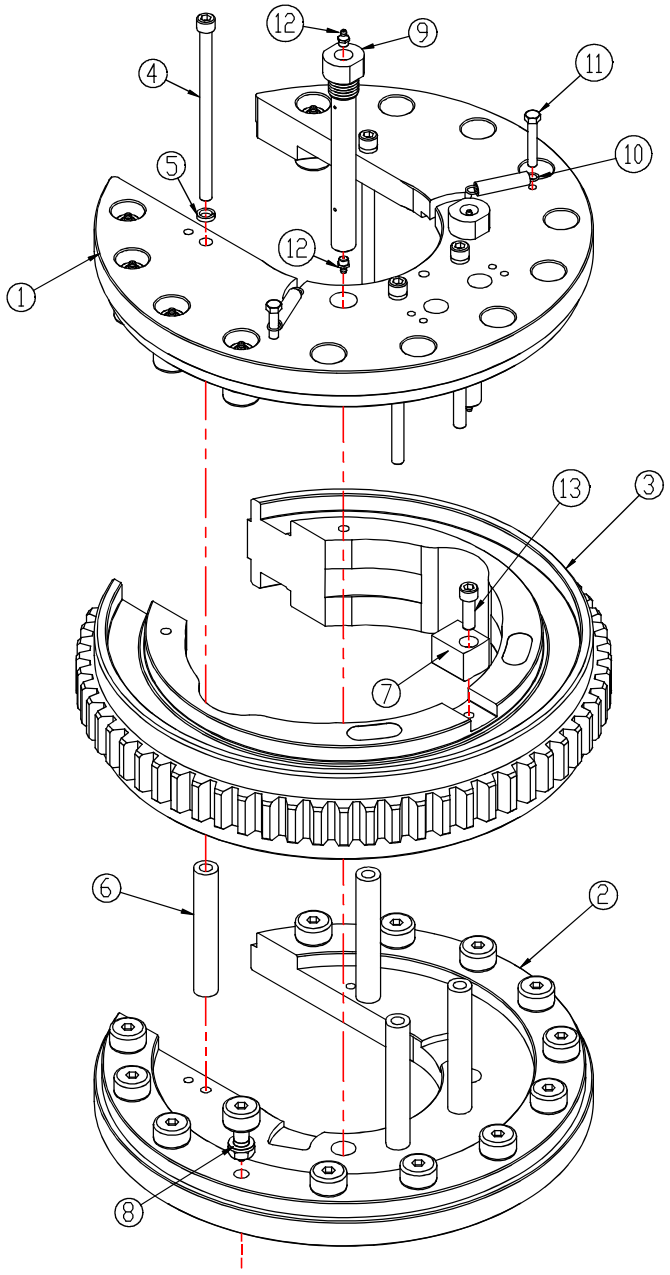
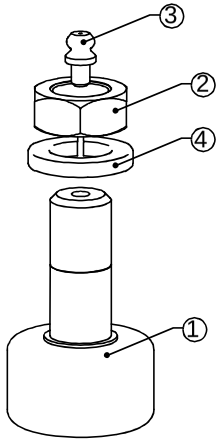
2		03/14/06
REV. #	LOG #	DATE

REF: P:\Manuals\Equip Manuals\Dwgs\CLE7625 UHT\Cage Plate Top rev2.wpg



Item #	Qty.	Part Number	Part Name
1	1	76003	TOP CAGE PLATE WELDMENT
2	1	76056	BOTTOM CAGE PLATE
3	1	76057	RING GEAR
4	4	1108-M	SHCS 1/2"-13 X 8 1/2"
5	4	210	1/2" HI COLLAR LOCKWASHER
6	4	76011-A	CAGE PLATE SPACER
7	1	76053	RING GEAR KEY
8	26	1968-ASY ★	1 1/2" CAM FOLLOWER ASSEMBLY (CF 1 1/2-SB)
9	2	76114	PIVOT PIN
10	2	BUC4019	DOOR SPRING #733 -- EXT
11	2	1055	3/8-16 x 2 1/4 HHCS
12	4	1001	1/8 NPT ZERT
13	1	1106-A	1/2"-13 X 1 1/2" SHCS



1 1/2" CAM FOLLOWER ASSEMBLY NO. 1968-ASY ★

Item #	Qty.	Part Number	Part Name
1	1	1968	CFH 1 1/2 SB CAM FOLLOWER
2	1	1150	5/8"-18 JAM NUT
3	1	1004	3/16 DRIVE ZERT
4	1	1151	5/8 LW

CAGE PLATE / RING GEAR ASSEMBLY

ASSEMBLY NO. 76002

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		09/14/05
REV. #	LOG #	DATE

REF: P:\Manuals\Equip Manuals\Dwgs\CLE7625UHT-04\76002.wpg

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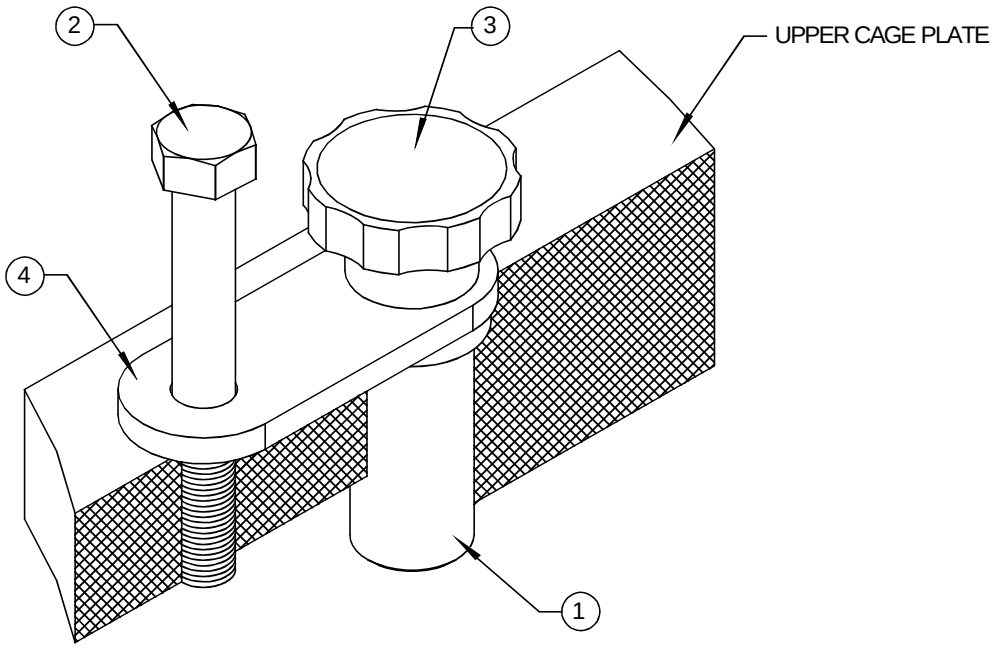
Item #	Qty.	Part Number	Part Name
1	1	14044	LOCKING PIN
2	1	X2-45	1/2-13 x 4 1/2 HHCS
3	1	DK-28	FLUTED KNOB
4	1	76127	LOCKING PIN KEY



LOCKING PIN ASSEMBLY

ASSEMBLY NO. 14216

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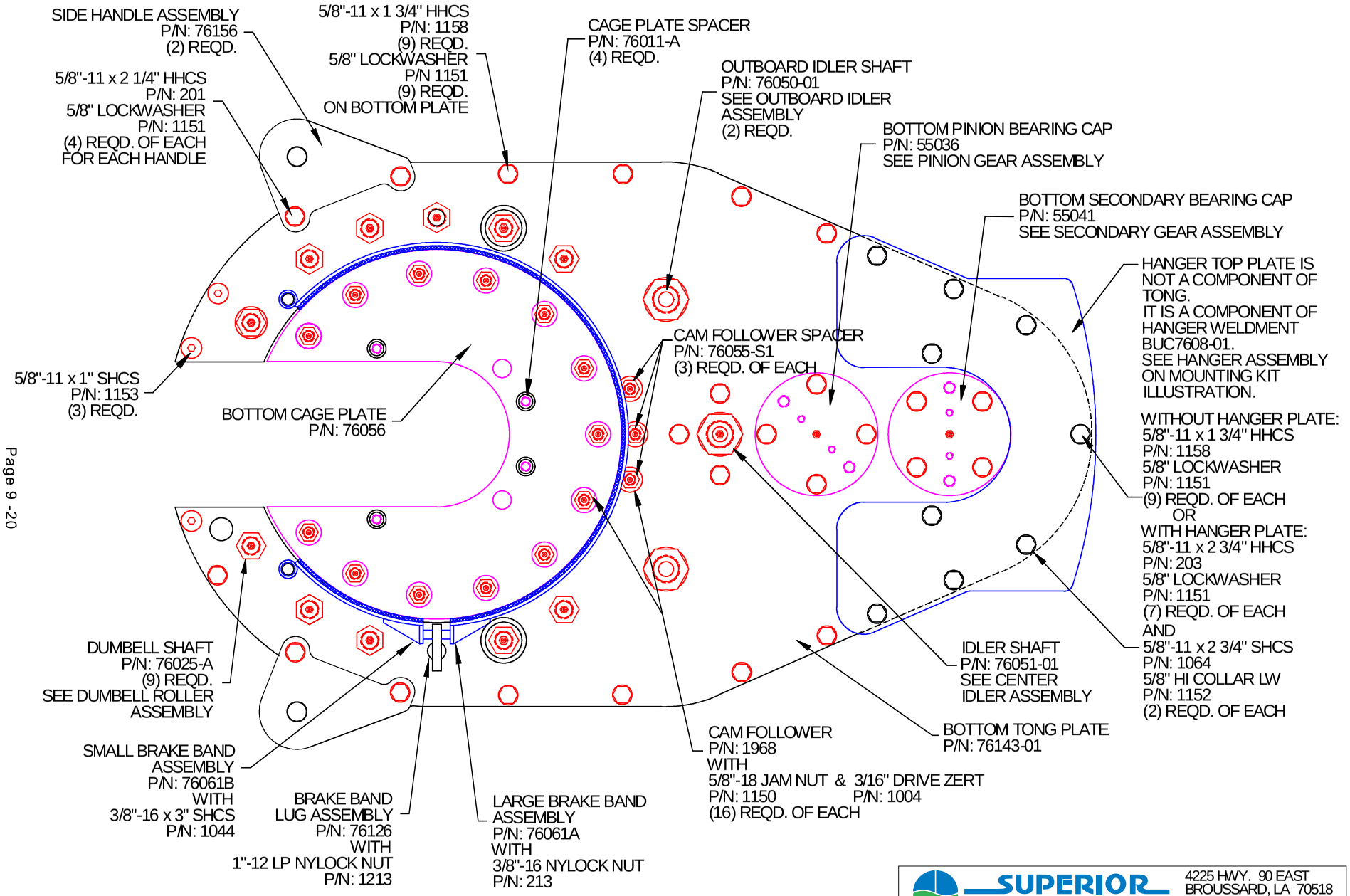
REV. #	LOG #	DATE
1		09/14/05

REF: P:\Manuals\Equip Manuals-Dwgs\CLE7625UHT\Locking Pin rev1.wpg



BOTTOM VIEW

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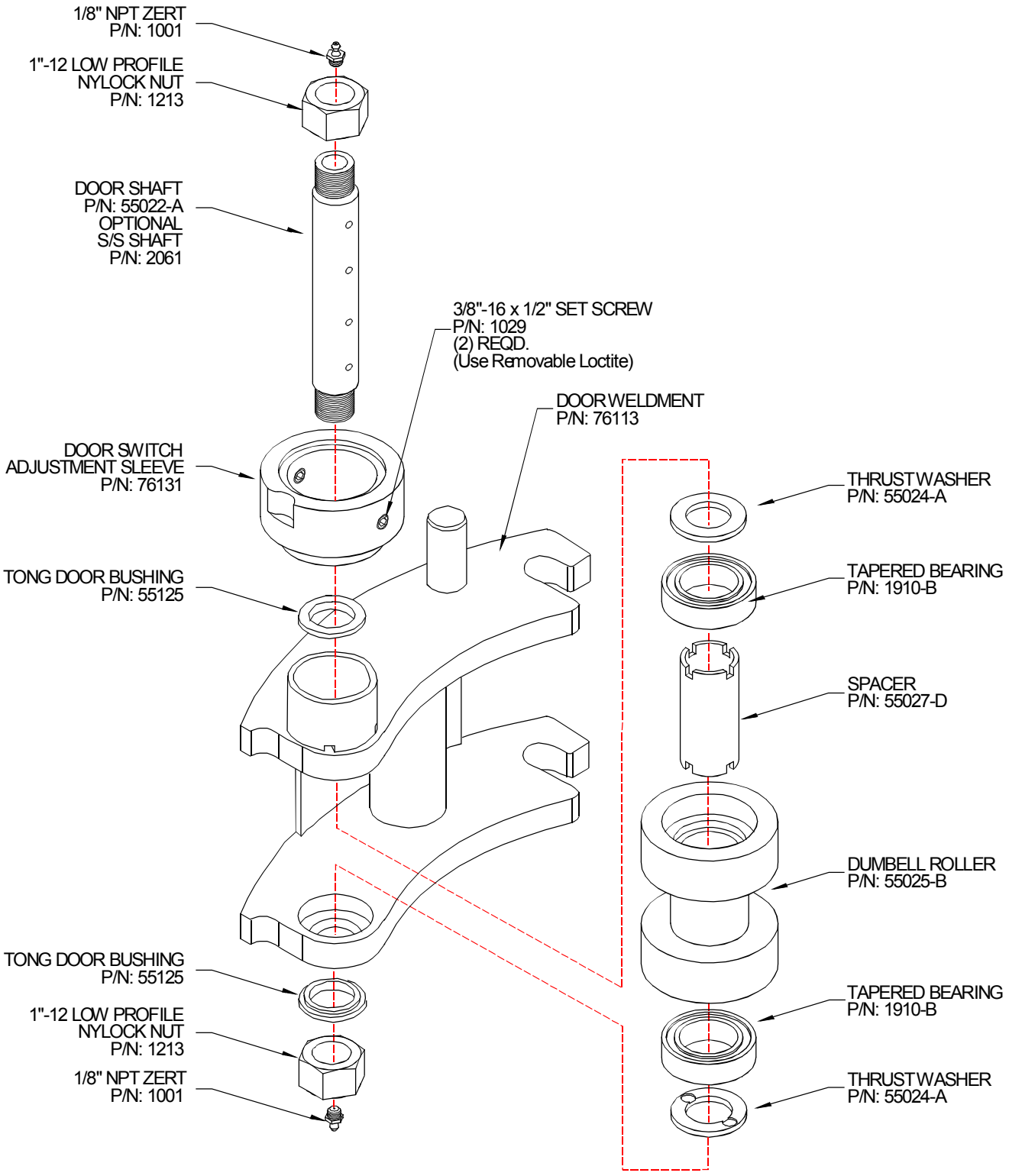
REV. #	LOG #	DATE
1		03/14/05

REF: P:\Manuals\Equip Manuals\Dwgs\CLE7625UHT-02Bottom View rev1.wpg



TONG DOOR ASSEMBLY

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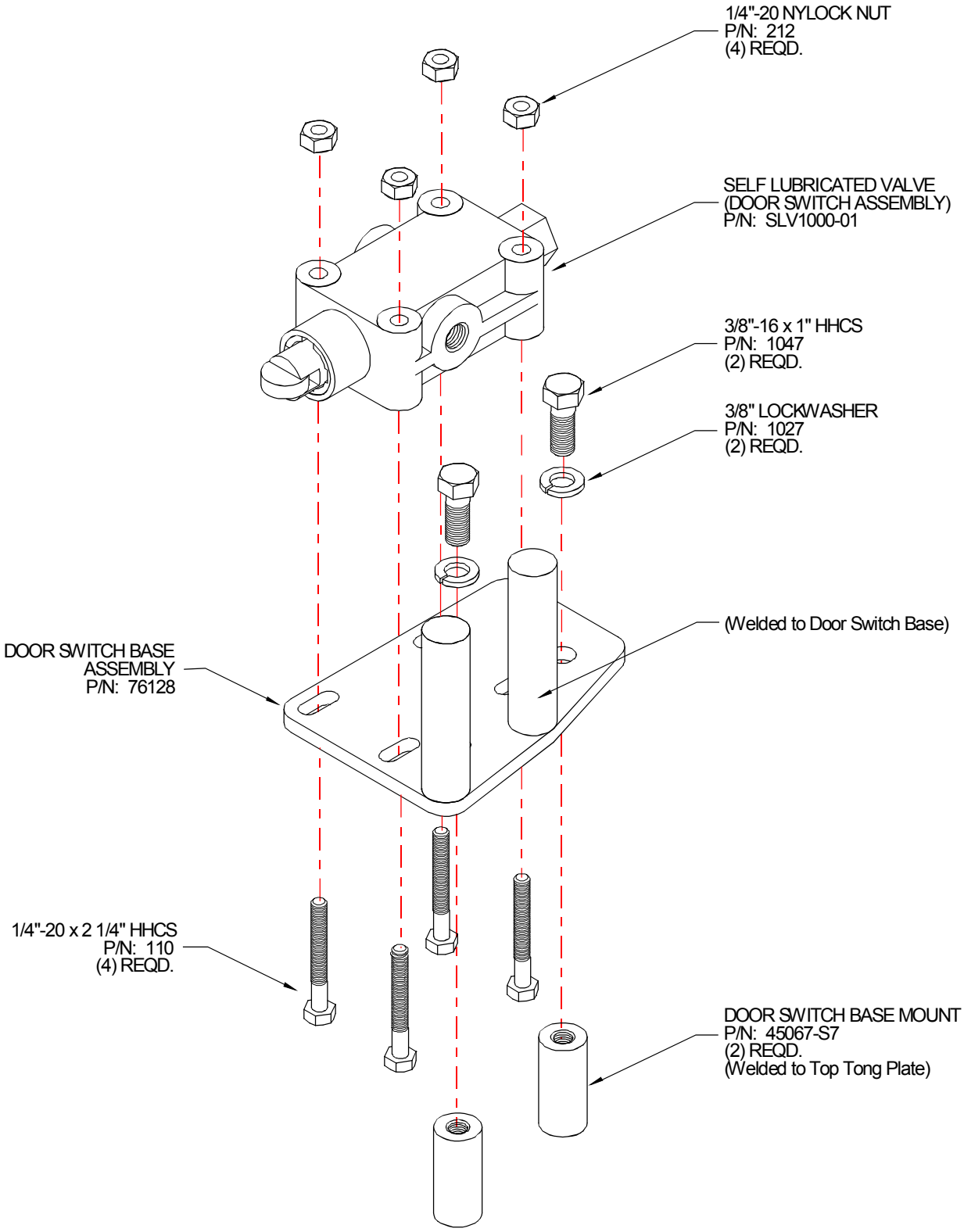
REV. #	LOG #	DATE
		10/19/04

REF: S:\Equip Manuals-Dwgs\CLE7625UHT-02\Door.wpg



DOOR SWITCH ASSEMBLY

SUPERIOR Manufacturing & Hydraulics
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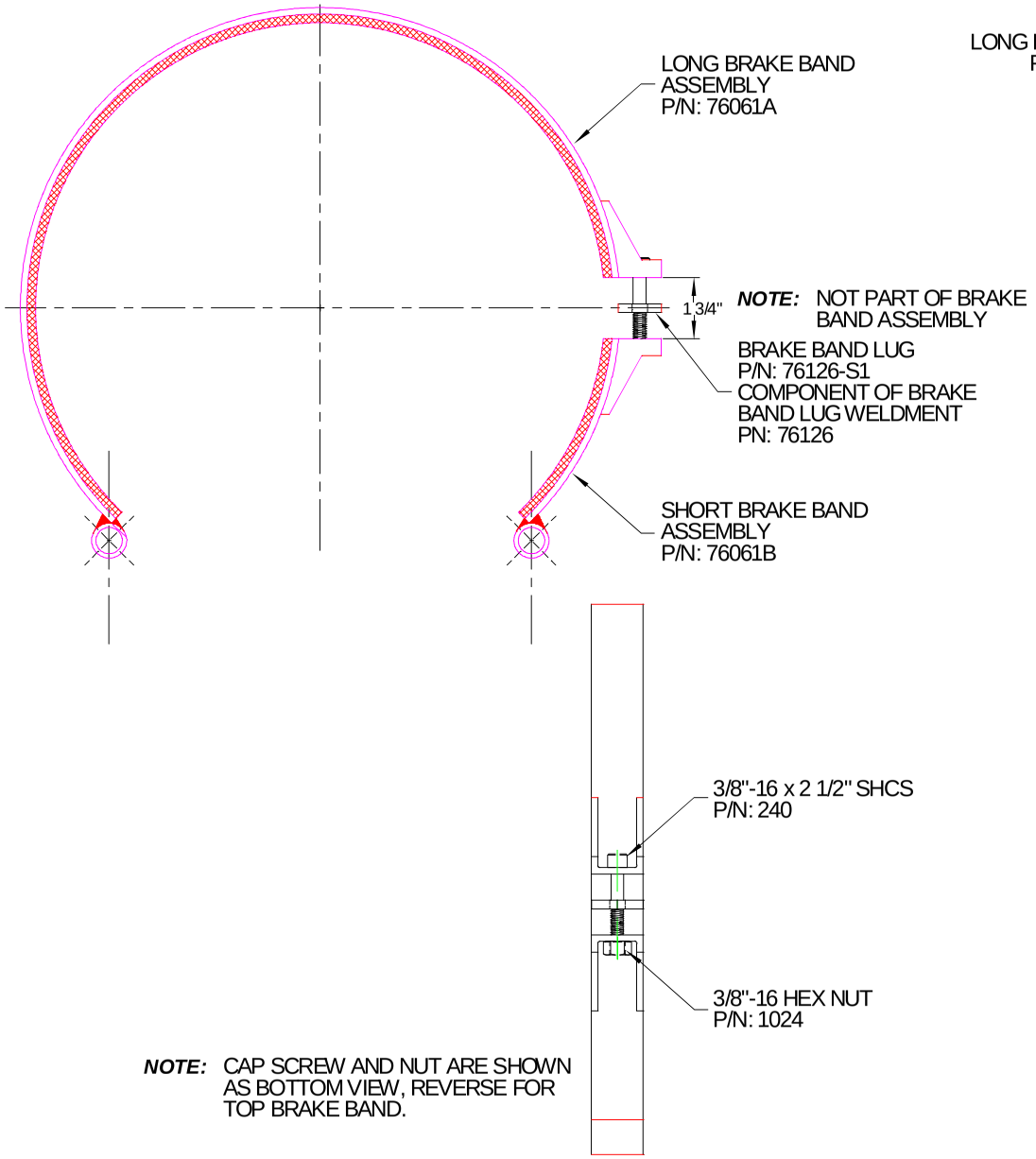
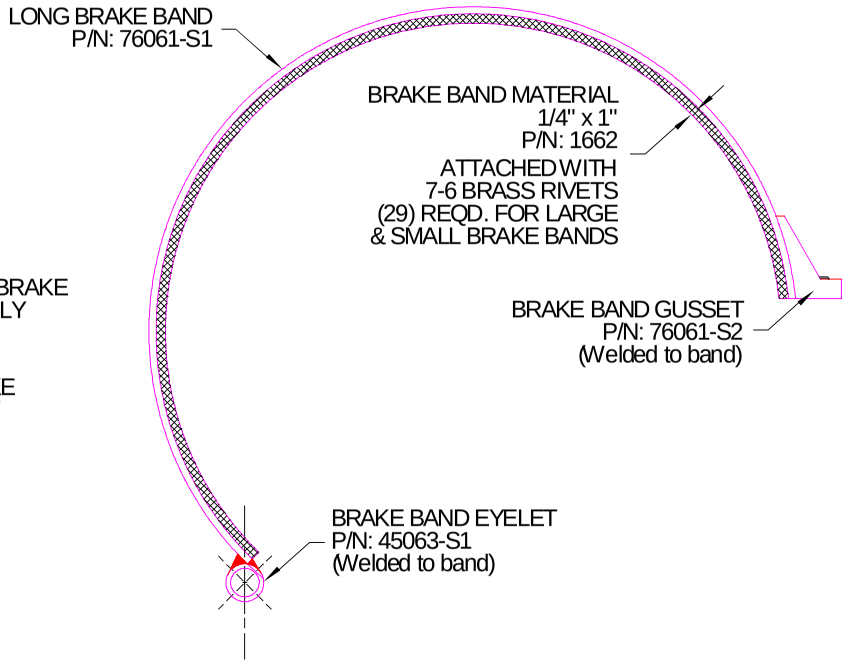
		06/22/00
REV. #	LOG #	DATE

REF: S:\Equip Manuals-Dwgs\Door Switch Assy.wpg

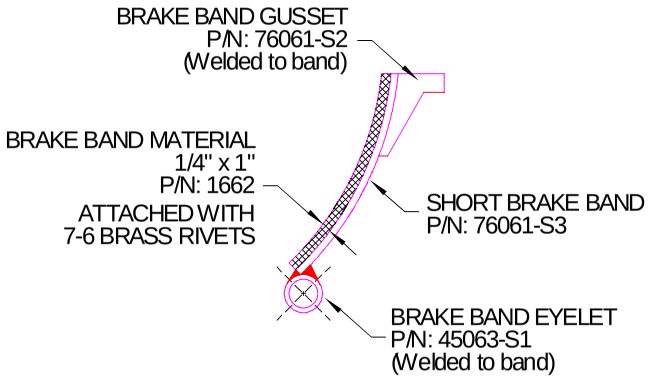


NOTE: CAP SCREW AND NUT ARE SHOWN AS BOTTOM VIEW, REVERSE FOR TOP BRAKE BAND.

LARGE BRAKE BAND ASSEMBLY
ASSEMBLY NO. 76061A



SMALL BRAKE BAND ASSEMBLY
ASSEMBLY NO. 76061B



BRAKE BAND ASSEMBLY

ASSEMBLY NO. 76061

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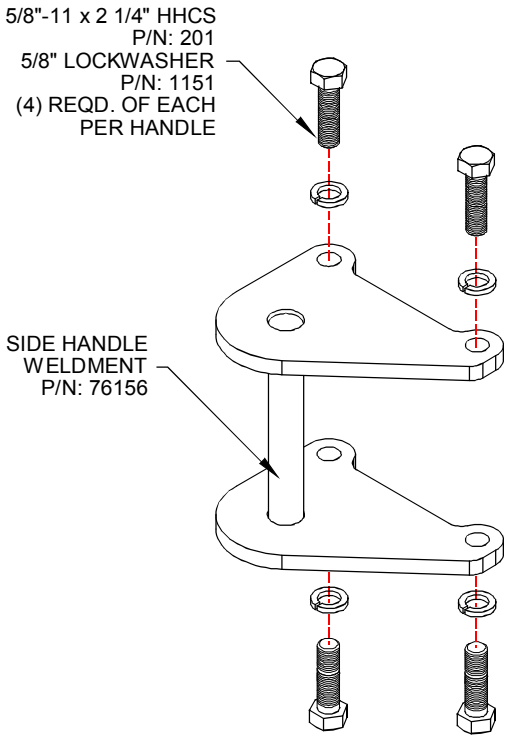
REV. #	LOG #	DATE
1		09/15/05

REF: S:\Equip Manuals\Dwgs\CLE7625UHT\Brake Band Assy rev1.wpg



SIDE HANDLE ASSEMBLY

WELDMENT NO. 76156

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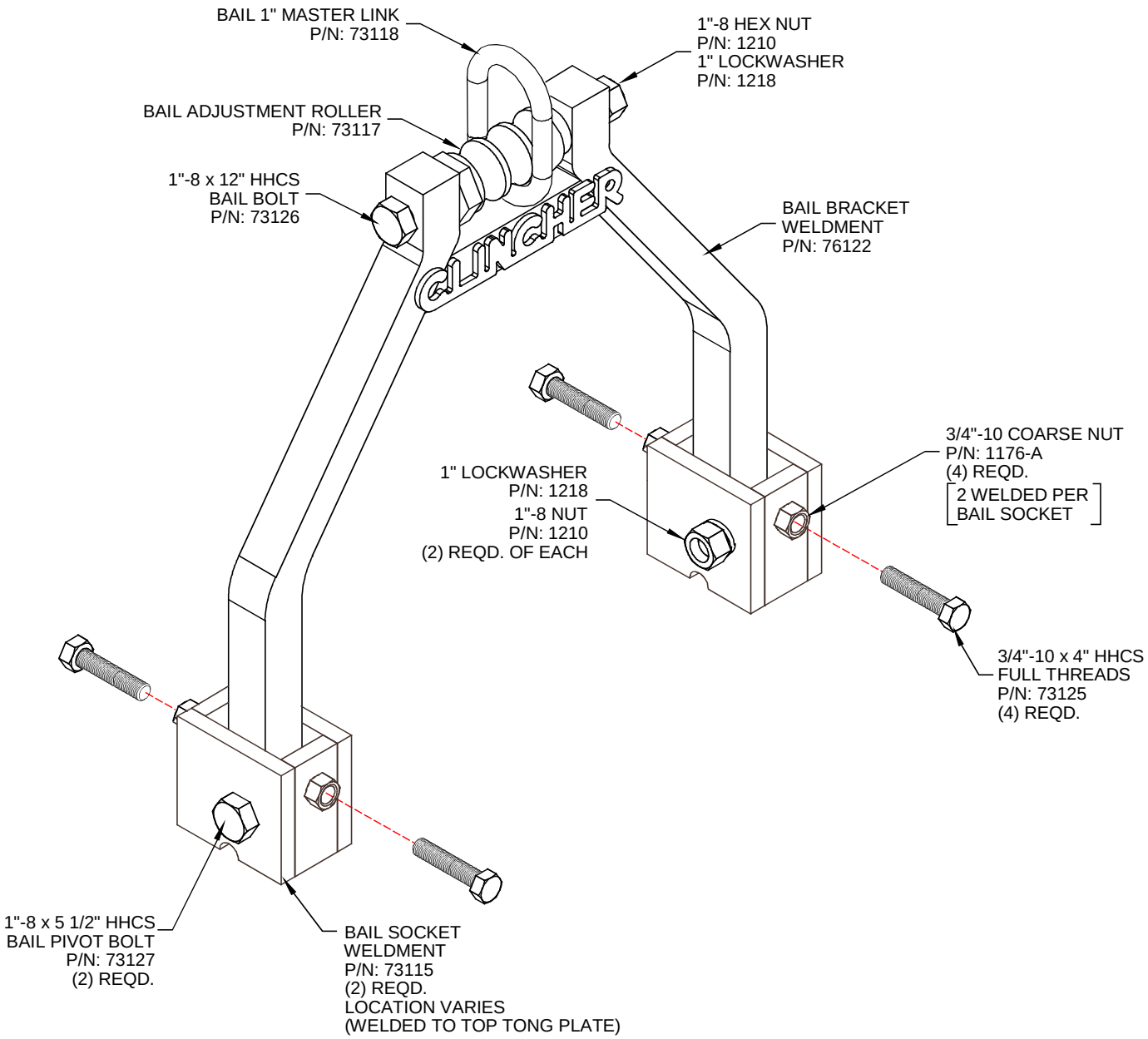
		10/19/04
REV. #	LOG #	DATE

REF: S:\Equip Manuals-Dwgs\CLE7625UHT-02\Side Hdle.wpg



BAIL ASSEMBLY

ASSEMBLY NUMBER 76121
FOR TONG MODEL CLE7625 UHT-08

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		11/13/07
REV. #	LOG #	DATE

REF: P:\Manuals\Equip Manuals\Dwgs\CLE7625UHT-08\76121 Bail Assy.wpg

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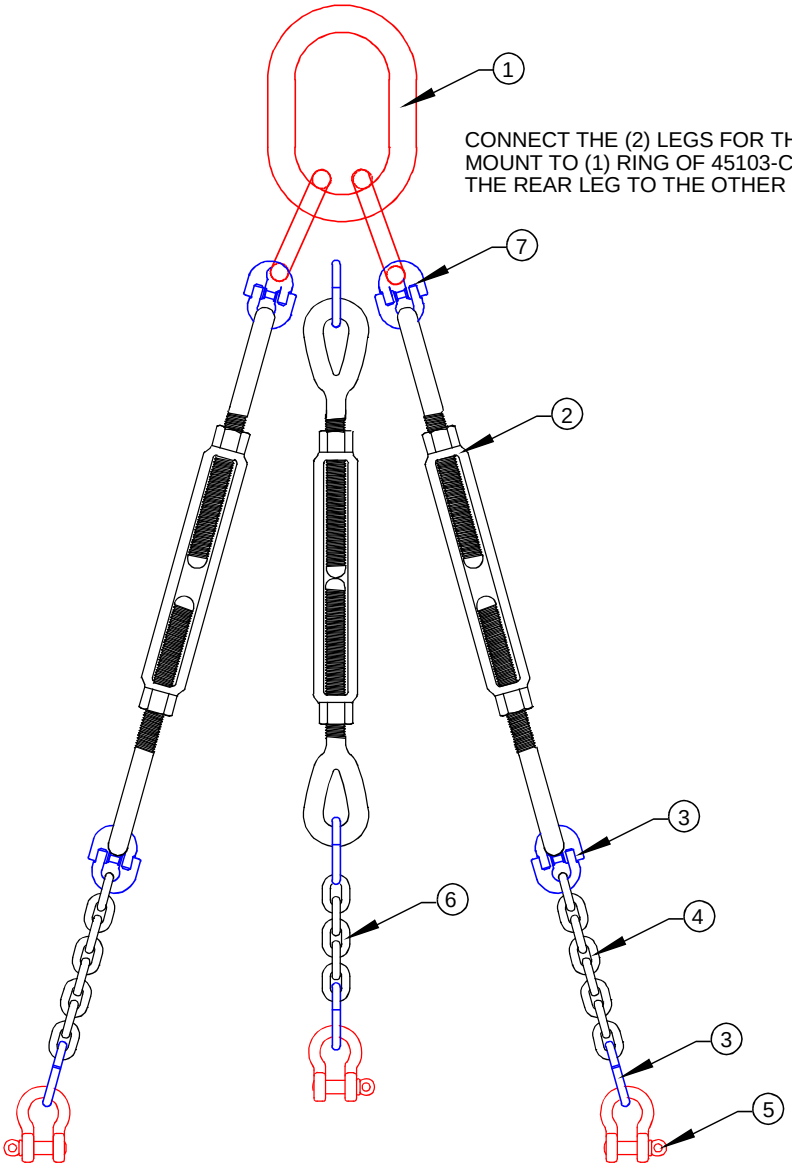
Item #	Qty.	Part Number	Description
1	1	45103-C	1" A-345 MASTER LINK ASSEMBLY
2	3	55001-02	3/4" x 6" TURNBUCKLE
3	6	40027-S3	5/16" CONNECTING LINK
4	2	- - - - -	5/16" CHAIN LINK (8 LINKS)
5	3	40027-S4A	1/2" SHACKLE
6	1	- - - - -	5/16" CHAIN LINK (5 LINKS)
7	3	40027-S3B	3/8" CONNECTING LINK



BRIDLE ASSEMBLY

ASSEMBLY NUMBER 55001-01
FOR TONG MODEL CLE7625 UHT

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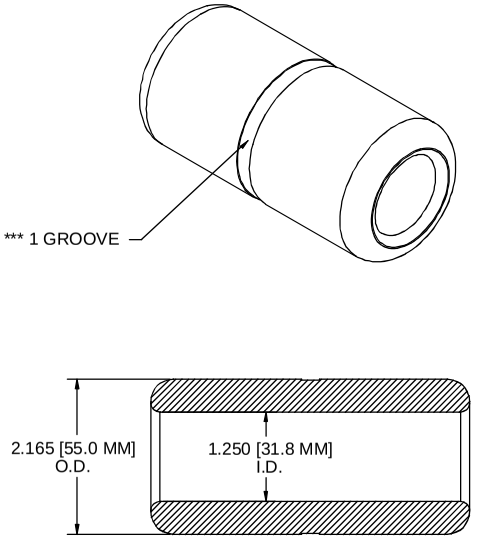
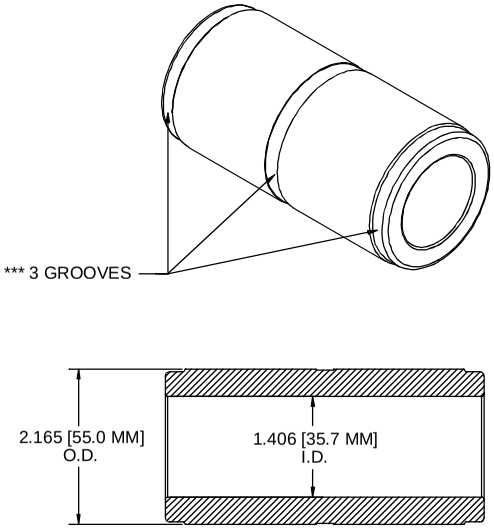
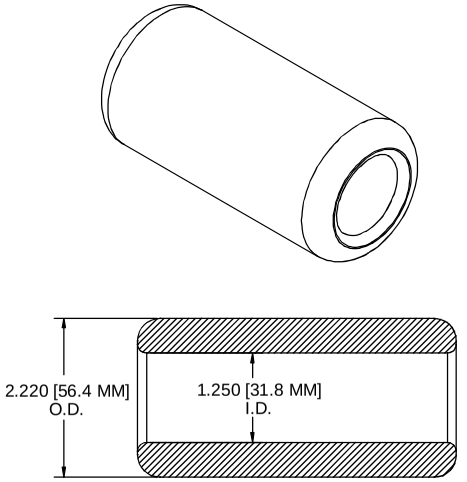
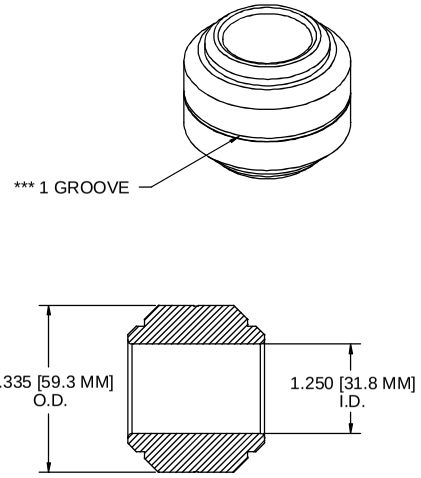
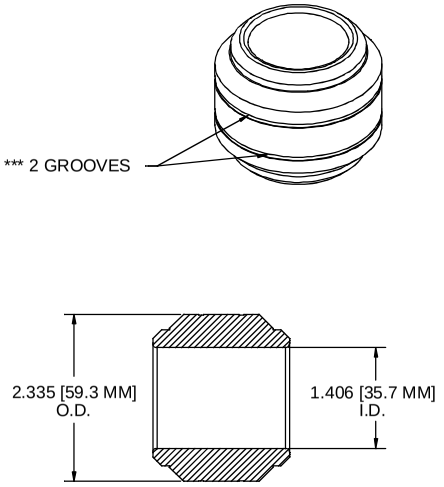
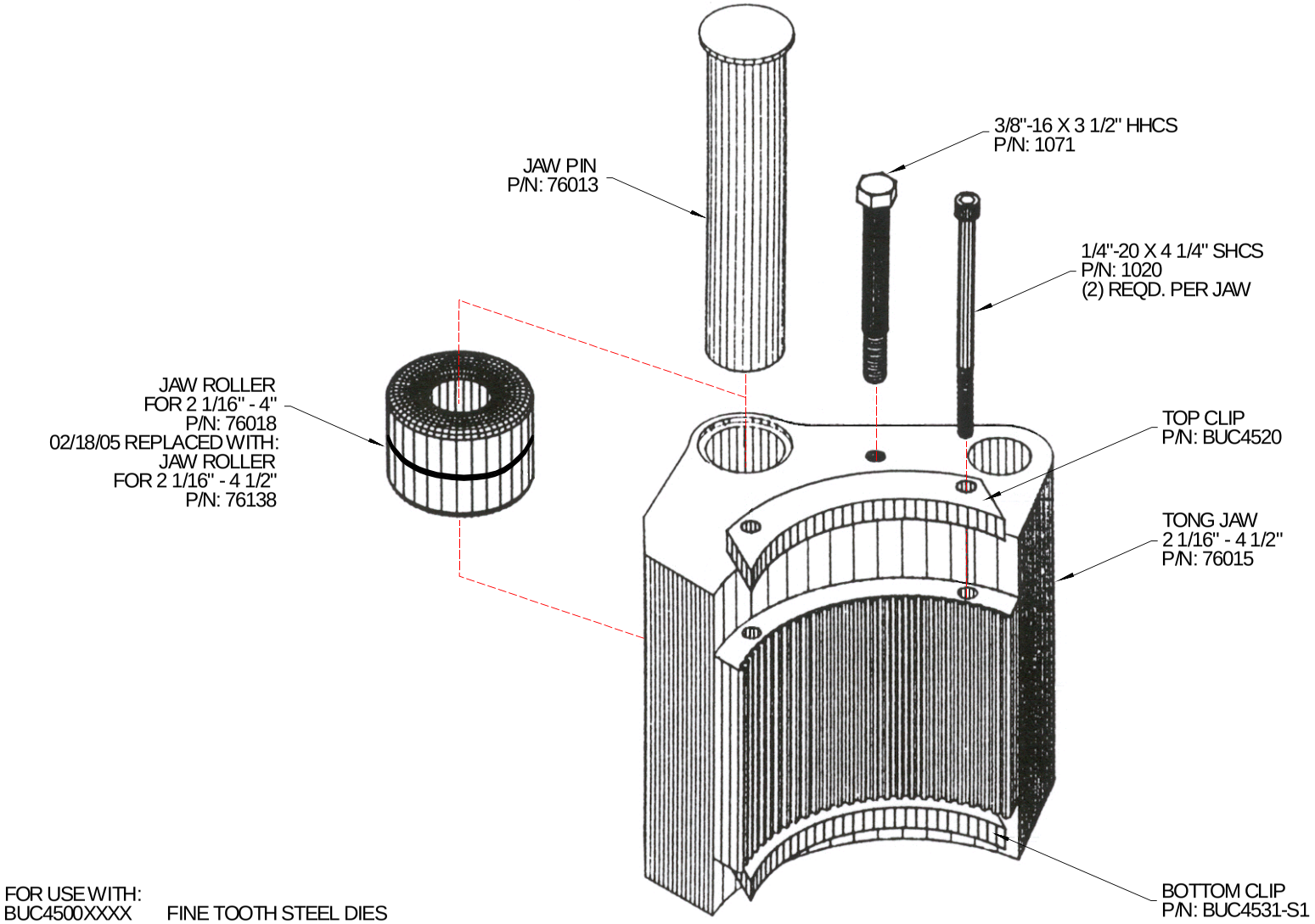
REV. #	LOG #	DATE
2		09/15/05

REF: P:\Manuals\Equip Manuals\Dwgs\CLE7625UHT\Bridle Assy rev2.wpg

	STANDARD	LOW FRICTION	DOVETAIL JAWS
JAW RANGE (7 5/8 - 4 3/4)	 P/N: 76136 USED IN ASSEMBLY CJ-76B	 P/N: 76137 USED IN ASEMBLY CJ-LF-76B	 P/N: 76014 USED IN ASSEMBLIES CJDT76X_ _ _ _ & CJ-70A
JAW RANGE (4 1/2 - 2 1/16)	 P/N: 76138 USED IN ASSEMBLY CJ-76A	 P/N: 76139 USED IN ASSEMBLY CJ-LF-76A	

*** NEW IDENTIFICATION GROOVES



FOR USE WITH:
BUC4500XXXX FINE TOOTH STEEL DIES

7 5/8" UHT TONG JAW ASSEMBLY

2 3/8" - 4 1/2" ASSEMBLY NO. CJ-76A

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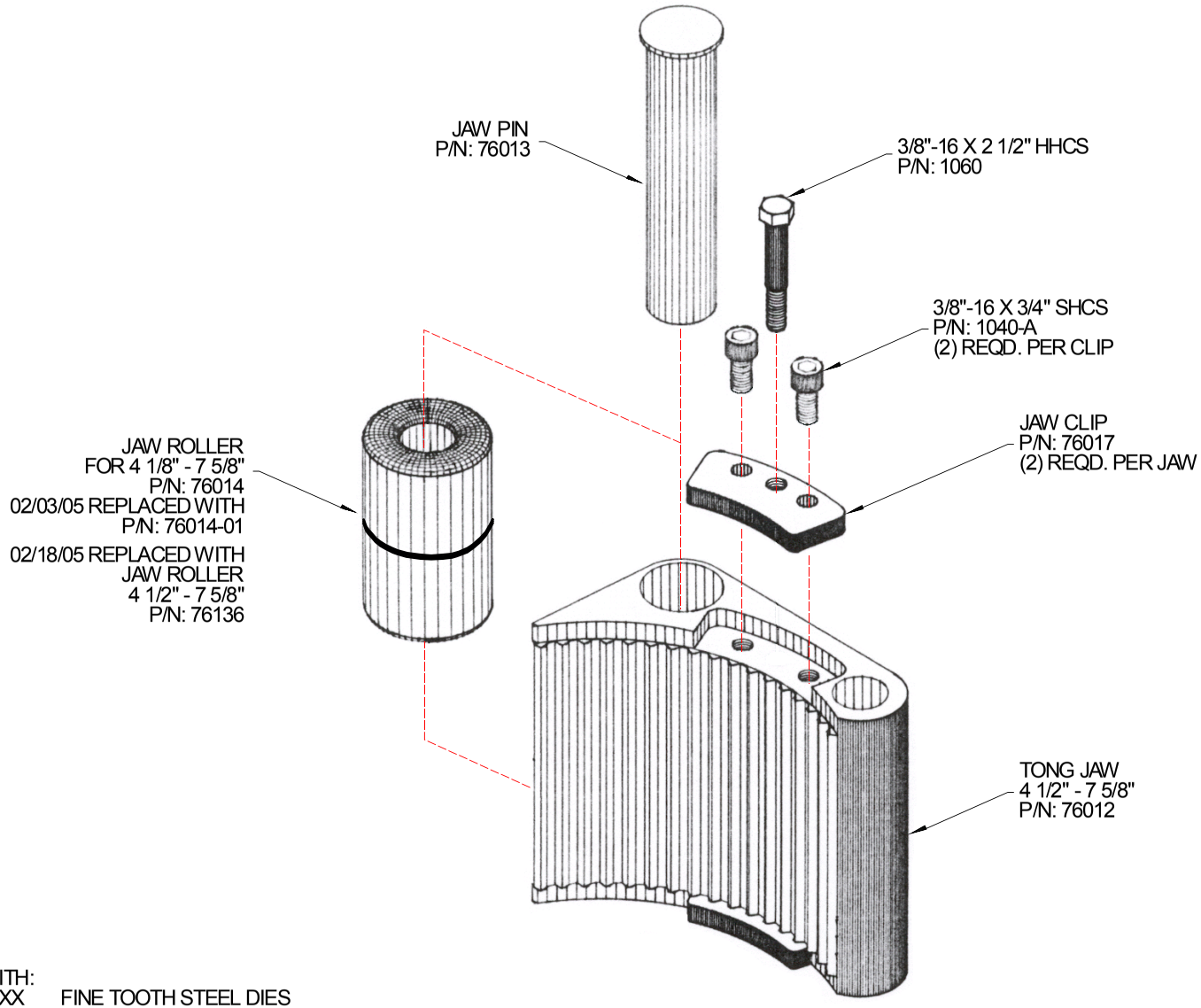
REV. #	LOG #	DATE
1		04/18/05

REF: P:\Manuals\Equip Manuals\Dwgs\CLE7625UHT\Jaw CJ-76A rev1.wpg



FOR USE WITH:
BUC7625XXXX FINE TOOTH STEEL DIES
BB7625XXXX **GRIT FACE™** DIES (4 1/2" AND LARGER ONLY)

7 5/8" UHT TONG JAW ASSEMBLY

4 1/2" - 7 5/8" ASSEMBLY NO. CJ-76B

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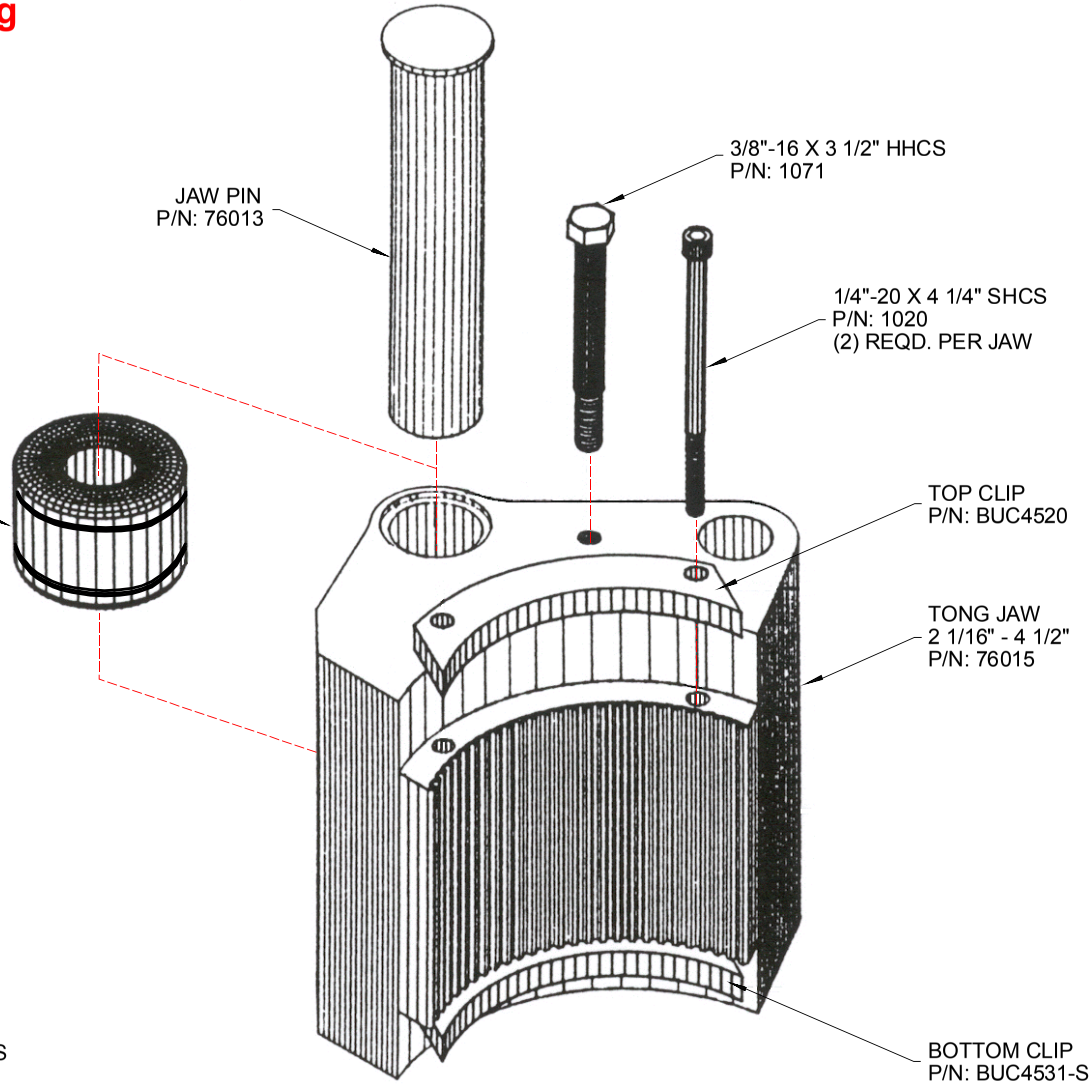
2		04/18/05
REV. #	LOG #	DATE

REF: P:\Manuals\Equip Manuals\Dwgs\CLE7625UHT\Jaw CJ-76B rev2.wpg

CAUTION!
When using Low Friction Jaws, tong torque should be limited to 50% of maximum torque rating.



FOR USE WITH:

BUC4500XXXX	FINE TOOTH STEEL DIES
BUCA4500XXXX	ALUMINUM DIES
BB4500XXXX	**GRIT FACE™** DIES

7 5/8" UHT TONG
LOW FRICTION JAW ASSEMBLY

2 1/16" - 4 1/2" ASSEMBLY NO. CJ-LF-76A

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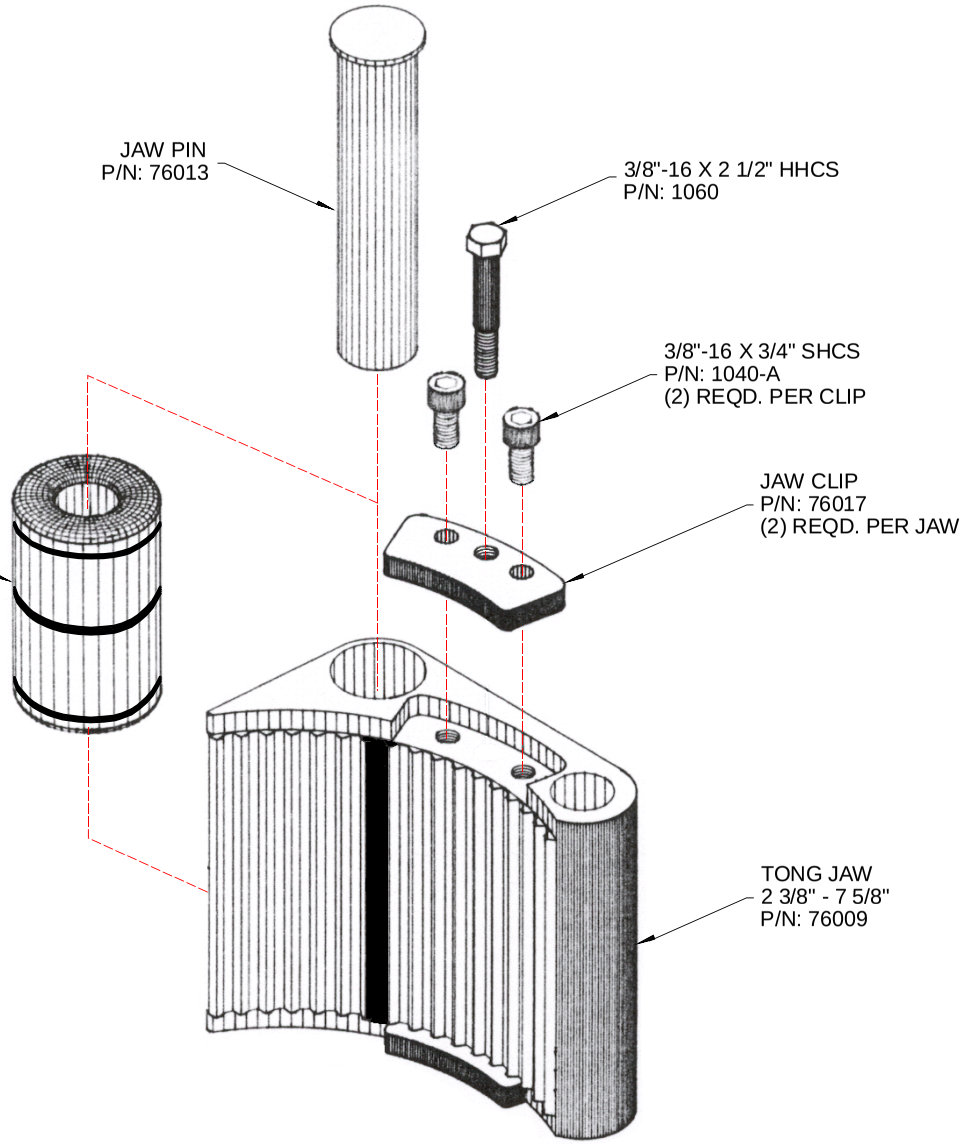
2		04/18/05
REV. #	LOG #	DATE

REF: P:\Manuals\Equip Manuals\Dwgs\CLE7625UHT\Jaw CJ-LF-76A rev2.wpg

CAUTION!
When using Low Friction Jaws, tong torque should be limited to 50% of maximum torque rating.



FOR USE WITH:
BUCA7625XXXX ALUMINUM DIES

7 5/8" UHT TONG
LOW FRICTION JAW ASSEMBLY

2 3/8" - 7 5/8" ASSEMBLY NO. CJ-LF-76B

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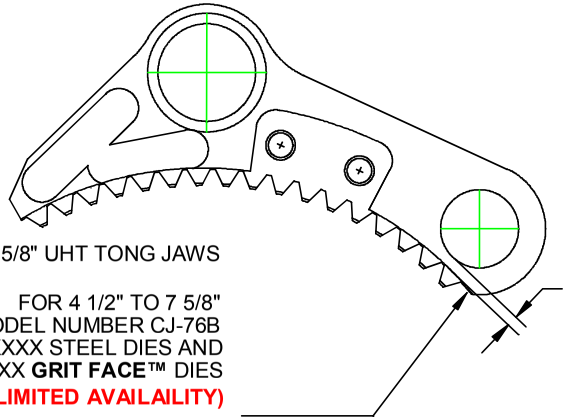
REV. #	LOG #	DATE
5		02/15/07

REF: P:\Manuals\Equip Manuals\Dwgs\CLE7625UHT\Jaw CJ-LF-76B rev5.wpg

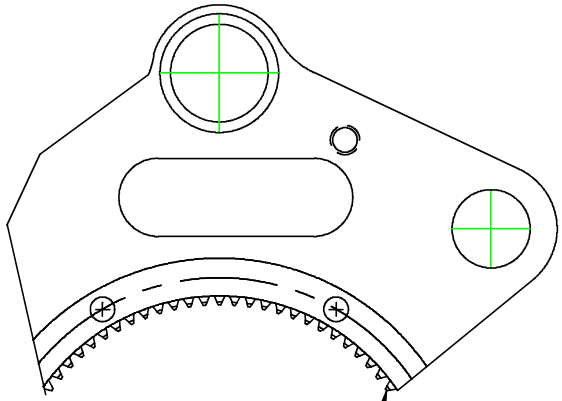


CLE7625 7 5/8" UHT TONG JAWS

FOR 4 1/2" TO 7 5/8"
JAW MODEL NUMBER CJ-76B
ACCEPTS BUC7625XXXX STEEL DIES AND
ACCEPTS BB7625XXXX **GRIT FACE™** DIES
(BB7625XXXX HAVE A LIMITED AVAILAILITY)

0.139 INCHES
REF DIM
DEFINES
JAW SIZE

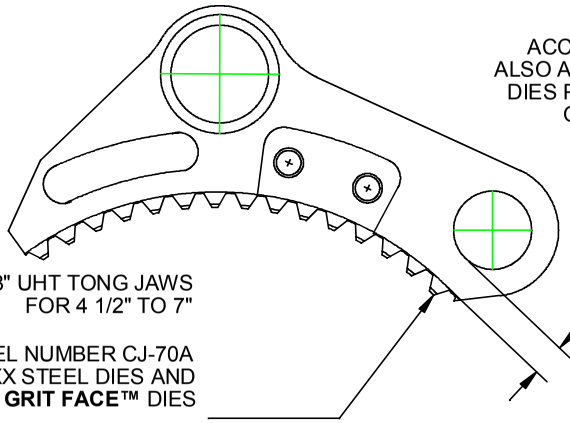
FOR 2 3/8" TO 7 5/8"
JAW MODEL NUMBER CJ-LF-76B
ACCEPTS BUCA7625XXXX ALUMINUM DIES
PROVIDED TORQUE IS LIMITED TO 50%
OF TONG'S MAXIMUM TORQUE RATING



CLE7625 7 5/8" UHT TONG JAWS

FOR 2 3/8" TO 4 1/2"
JAW MODEL NUMBER CJ-76A
ACCEPTS BUC4500XXXX STEEL DIES AND
ACCEPTS BB4500XXXX **GRIT FACE™** DIES

FOR 2 1/16" TO 4 1/2"
JAW MODEL NUMBER CJ-LF-76A
ACCEPTS BUCA4500XXXX ALUMINUM DIES
ALSO ACCEPTS BUC4500 AND BB4500 SERIES
DIES PROVIDED TORQUE IS LIMITED TO 50%
OF TONG'S MAXIMUM TORQUE RATING



CLE7625 7 5/8" UHT TONG JAWS
FOR 4 1/2" TO 7"

JAW MODEL NUMBER CJ-70A
ACCEPTS BUC7000XXXX STEEL DIES AND
ACCEPTS BB7000XXXX **GRIT FACE™** DIES

0.428 INCHES
REF DIM
DEFINES
JAW SIZE

JAW MODEL NUMBER CJ-LF-70A
ACCEPTS BUCA7000XXXX ALUMINUM DIES
ALSO ACCEPTS BUC7000 AND BB7000 SERIES
DIES PROVIDED TORQUE IS LIMITED TO 50%
OF TONG'S MAXIMUM TORQUE RATING

(ALL TYPES OF 7000 SERIES HAVE A LIMITED AVAILAILITY)

CLE7625 JAW COMPARISON

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2		02/15/07
REV. #	LOG #	DATE

REF: P:\Manuals\Equip Manuals\Dwgs\CLE7625UHTJaw Comparison rev2.wpg

Item #	Qty.	Part Number	Part Name
1	1	SEE CHART	LEFT D.T. JAW WELDMENT
2	1	SEE CHART	RIGHT D.T. JAW WELDMENT
3	4	SEE CHART	DOVETAIL STRIP DIE
4	2	76013	TONG JAW PIN
5	2	76014	TONG JAW ROLLER
6	2	1060	3/8"-16 x 2 1/2" HHCS
7	4	234	3/8"-16 x 1/2" SHCS

FOR MANUFACTURE STARTING 04/19/05

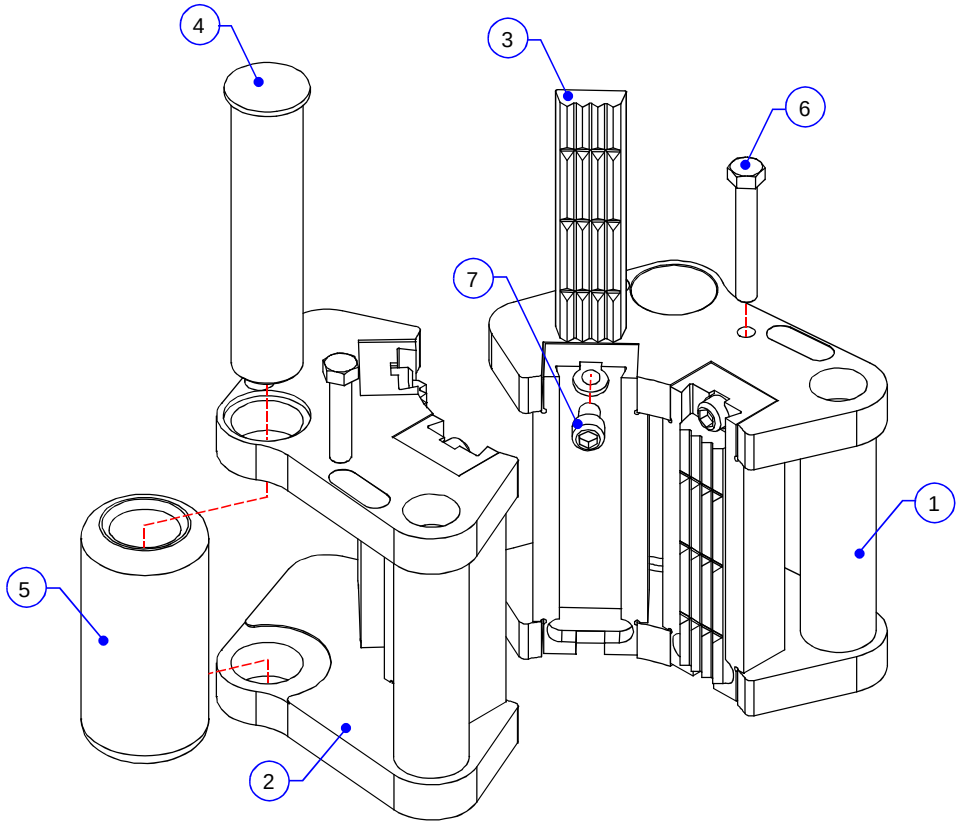
	Size	Jaw Set Assembly Number with Reg. Pin	Left Jaw Weldment Part Number	Right Jaw Weldment Part Number	Dovetail Strip Die Part Number
3	2 7/8"	CJDT76X02875	76X2875L	76X2875R	DTI4004
3	3 1/8"	CJDT76X03125	76X3125L	76X3125R	DTI4004
3	3 3/8"	CJDT76X03375	76X3375L	76X3375R	DTI4004
3	3 1/2"	CJDT76X03500	76X3500L	76X3500R	DTI4004
3	4"	CJDT76X04000	76X4000L	76X4000R	DTI4004
	4 1/2"	CJDT76X04500	76X4500L	76X4500R	DTI4004 3

	Size	Jaw Set Assembly Number with Reg. Pin	Left Jaw Weldment Part Number	Right Jaw Weldment Part Number	Dovetail Strip Die Part Number
3	5"	CJDT76X05000	76X5000L	76X5000R	DTI1602
	5 1/2"	CJDT76X05500	76X5500L	76X5500R	DTI1602
3	6"	CJDT76X06000	76X6000L	76X6000R	DTI1602
3	6 5/8"	CJDT76X06625	76X6625L	76X6625R	DTI1602
	7"	CJDT76X07000	76X7000L	76X7000R	DTI1602
	7 5/8"	CJDT76X07625	76X7625L	76X7625R	DTI1602

3 MANUFACTURE BEGINNING 11/19/07:
CJDT76X SIZES 2 7/8" THRU 6" ARE REPLACED WITH CJDTLF78X AND CJDT78X

FOR MANUFACTURE STARTING 11/22/05

Size	Jaw Set Assembly Number with Reg. Pin	Solid Left Jaw Part Number	Solid Right Jaw Part Number	Dovetail Strip Die Part Number
7 5/8"	CJDT76X07625	76212-7625L	76212-7625R	DTI1602



7 5/8" UHT TONG DOVETAIL JAW SET ASSEMBLY

SEE CHART FOR ASSEMBLY NUMBERS

Rev.	Date	Description
3	12/12/07	Corrected Die PN for 4 1/2" Jaw from DTI4001 to DTI4004.
		Added sizes 2 7/8", 3 1/8", 3 3/8", 3 1/2", 4", 5", 6" & 6 5/8"
		Added Note regarding Mfg. beginning 11/19/07 for sizes 2 7/8 thru 6".

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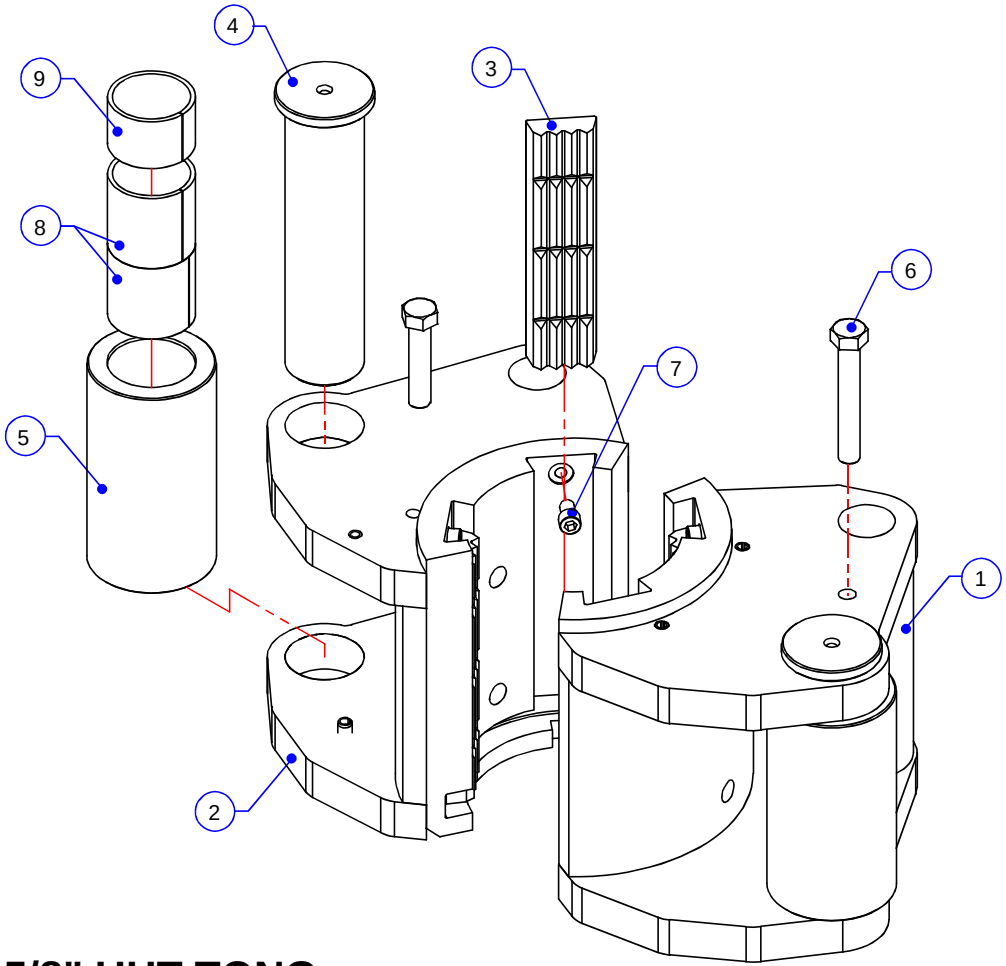
REV. #	LOG #	DATE
3		12/12/07

REF: P:\Manuals\Equip Manuals\Dwgs\CLE7625UHT\Jaw DT rev3.wpg

Item #	Qty.	Part Number	Part Name
1	1	SEE CHART	LEFT D.T. JAW WELDMENT
2	1	SEE CHART	RIGHT D.T. JAW WELDMENT
3	4	SEE CHART	DOVETAIL STRIP DIE
4	2	78203	TONG JAW PIN
5	2	78204	TONG JAW ROLLER
6	2	1060	3/8"-16 x 2 1/2" HHCS
7	4	213A	1/4"-20 x 3/8" SHCS
8	4	22DU24	GARLOCK BUSHING
9	2	22DU16	GARLOCK BUSHING

FOR MANUFACTURE STARTING 11/19/07

Size	*Jaw Set Assembly Number with Reg. Pin*	*Left Jaw Weldment Part Number*	*Right Jaw Weldment Part Number*	*Dovetail Strip Die Part Number*
2 3/8"	CJDTLF78X02375	78X2375L	78X2375R	DTI1602
2 7/8"	CJDTLF78X02875	78X2875L	78X2875R	DTI1602
3 1/8"	CJDTLF78X03125	78X3125L	78X3125R	DTI1602
3 3/8"	CJDTLF78X03375	78X3375L	78X3375R	DTI1602
3 1/2"	CJDTLF78X03500	78X3500L	78X3500R	DTI1602



7 5/8" UHT TONG DOVETAIL LOW FRICTION JAW SET ASSEMBLY

SEE CHART FOR ASSEMBLY NUMBERS

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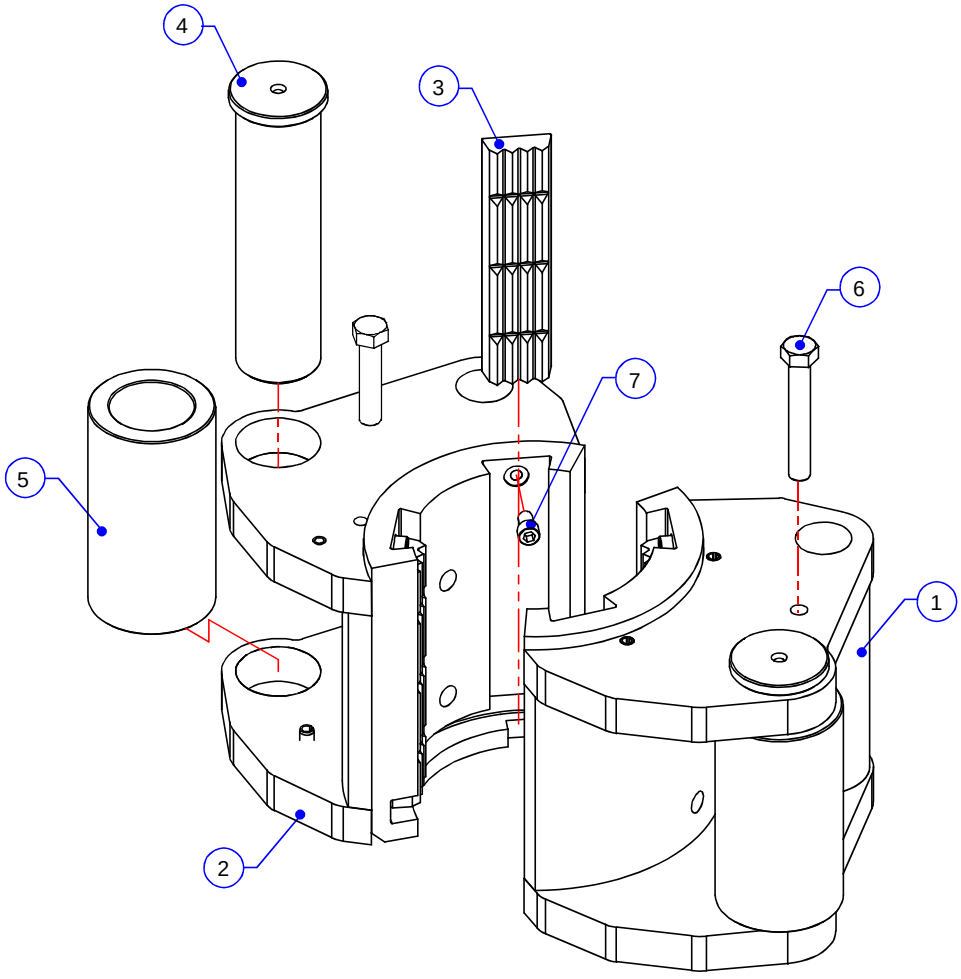
		12/12/07
REV. #	LOG #	DATE

REF: P:\Manuals\Equip Manuals\Dwgs\CLE7625UHT\Jaw DTLF78X.wpg

Item #	Qty.	Part Number	Part Name
1	1	SEE CHART	LEFT D.T. JAW WELDMENT
2	1	SEE CHART	RIGHT D.T. JAW WELDMENT
3	4	SEE CHART	DOVETAIL STRIP DIE
4	2	78202	TONG JAW PIN
5	2	78201	TONG JAW ROLLER
6	2	1060	3/8"-16 x 2 1/2" HHCS
7	4	213A	1/4"-20 x 3/8" SHCS

FOR MANUFACTURE STARTING 11/19/07

Size	*Jaw Set Assembly Number with Reg. Pin*	*Left Jaw Weldment Part Number*	*Right Jaw Weldment Part Number*	*Dovetail Strip Die Part Number*
4"	CJDT78X04000	78X4000L	78X4000R	DTI1602
4 1/2"	CJDT78X04500	78X4500L	78X4500R	DTI1602
5"	CJDT78X05000	78X5000L	78X5000R	DTI1602
5 1/2"	CJDT78X05500	78X5500L	78X5500R	DTI1602
6"	CJDT78X06000	78X6000L	78X6000R	DTI1602



7 5/8" UHT TONG DOVETAIL JAW SET ASSEMBLY

SEE CHART FOR ASSEMBLY NUMBERS

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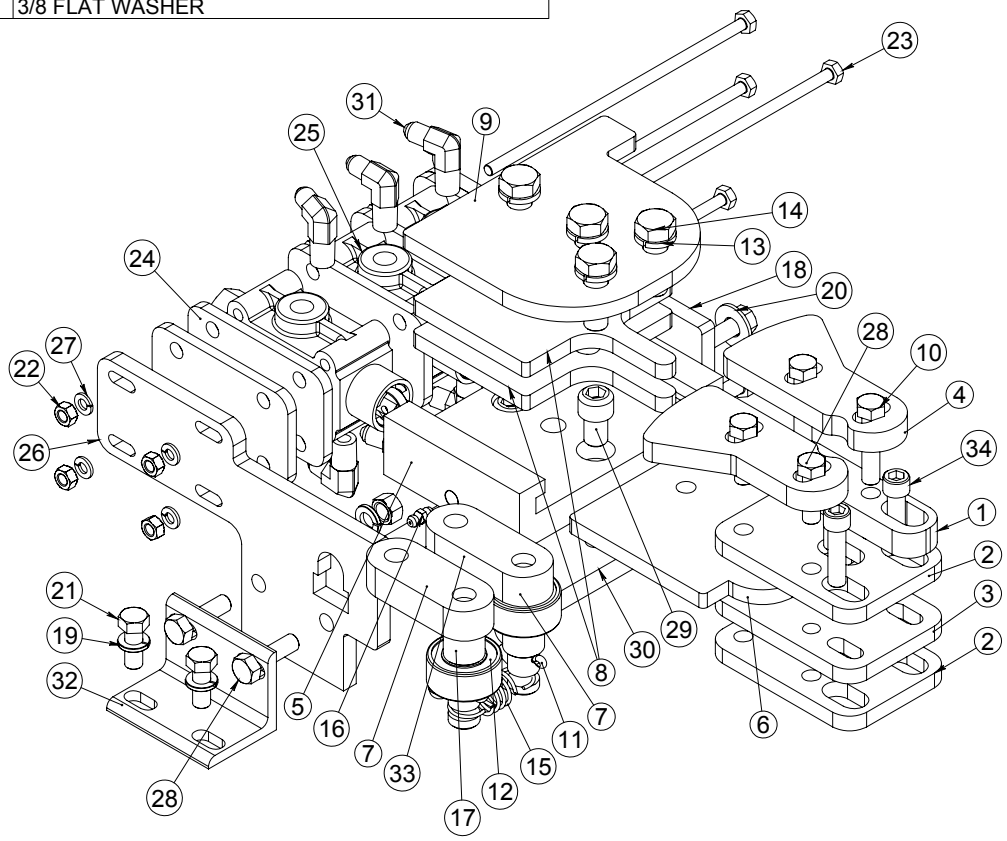
		12/12/07
REV. #	LOG #	DATE

REF: P:\Manuals\Equip Manuals\Dwgs\CLE7625UHT\Jaw DT78X.wpg

Item #	Qty.	Part Number	Part Name	Item #	Qty.	Part Number	Part Name
1	1	73157	UPPER MOUNTING PLATE	21	6	1047	3/8"-16 X 1" HHCS
2	2	73158	MID MOUNTING PLATE	22	4	100	1/4"-20 NUT
3	1	7315901	MIDDLE MOUNTING PLATE	23	4	2069A	1/4-20 X 7.5" HHCS GR8
4	2	73161-01	CAM PLATE	24	5	2056	CAM SWITCH MTG BRKT DUBBLER
5	1	73167	CAM PLATE GUIDE	25	3	SLV1000-01	SELF LUBRICATED CAM OPERATED PILOT VALVE ASSSEMBLY
6	1	73168-01	OUTER CAM PLATE				
7	2	73170	CAM SWITCH FLAP WELDMENT	26	1	73171-01R	CAM SWITCH MOUNT PLATE (RIGHT)
8	2	73172	CAM SWITCH MID PLATES	27	4	101	1/4" LOCKWASHER
9	1	73174	OUTER CAM PLATE	28	6	1048	3/8"-16 X 1 1/4" HHCS
10	2	141	3/8"-16 X 1 3/4" HHCS	29	2	245	1/2-13 x 3/4 SHCS
11	2	1016	1/8 x 1 SS COTTER PIN	30	1	73167-01	CAM SWITCH BASE PLATE
12	2	1915	.6693 ID x 1.5748 OD x 11/16 BEARING (5203SBKFF)	31	6	1576	90 DEG. 1/4 MNPT X 1/4 MJIC
13	4	1103	1/2" LOCKWASHER	32	2	73160	MOUNTING ANGLE
14	4	1112	1/2-13 x 1 1/2 HHCS	33	4	1024	3/8-16 NUT (1024)
15	1	73188	EXT. SPRING	34	3	238	3/8"-16 x 1 1/2" SHCS
16	1	1001	1/8 NPT ZERT				
17	2	1940-A	INNER RACE				
18	1	73171-01L	CAM SWITCH MOUNT (L)				
19	10	1027	WASHER, LOCK 3/8"				
20	2	1025	3/8 FLAT WASHER				



OPEN THROAT CAM POSITIONER ASSEMBLY

ASSEMBLY NO. 73165-02

MCCOY MOVING GLOBAL ENERGY FORWARD | DRILLING & COMPLETIONS SUPERIOR MANUFACTURING & HYDRAULICS

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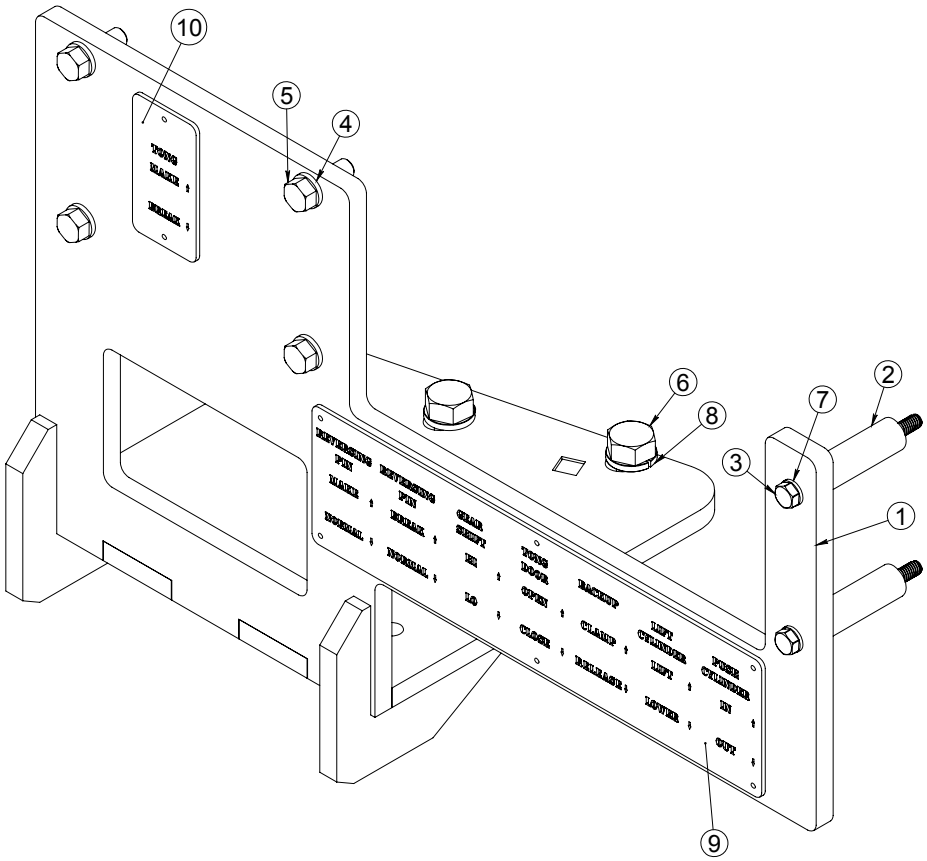
REV. #	LOG #	DATE

Item #	Qty.	Part Number	Part Name
1	1	73152	PVG VALVE MOUNT WELDMENT
2	2	14224-S3	VALVE LEG, 2 7/16" LONG
3	2	131-A	HHCS 5/16"-18 x 3 3/4"
4	4	1081	7/16" LOCKWASHER
5	4	1083	7/16-14 X 1 1/4" HHCS
6	3	202	5/8"-11 X 2 1/2" HHCS
7	2	1023-B	5/16 LOCKWASHER
8	3	1151	5/8 LW
9	1	VP7625-TAG2	VALVE PACKAGE OVERLAY
10	1	VP7625-TAG1	TONG MAKE/BREAK TAG



DVG REMOTE VALVE MOUNT ASSEMBLY

ASSEMBLY NO. 73153

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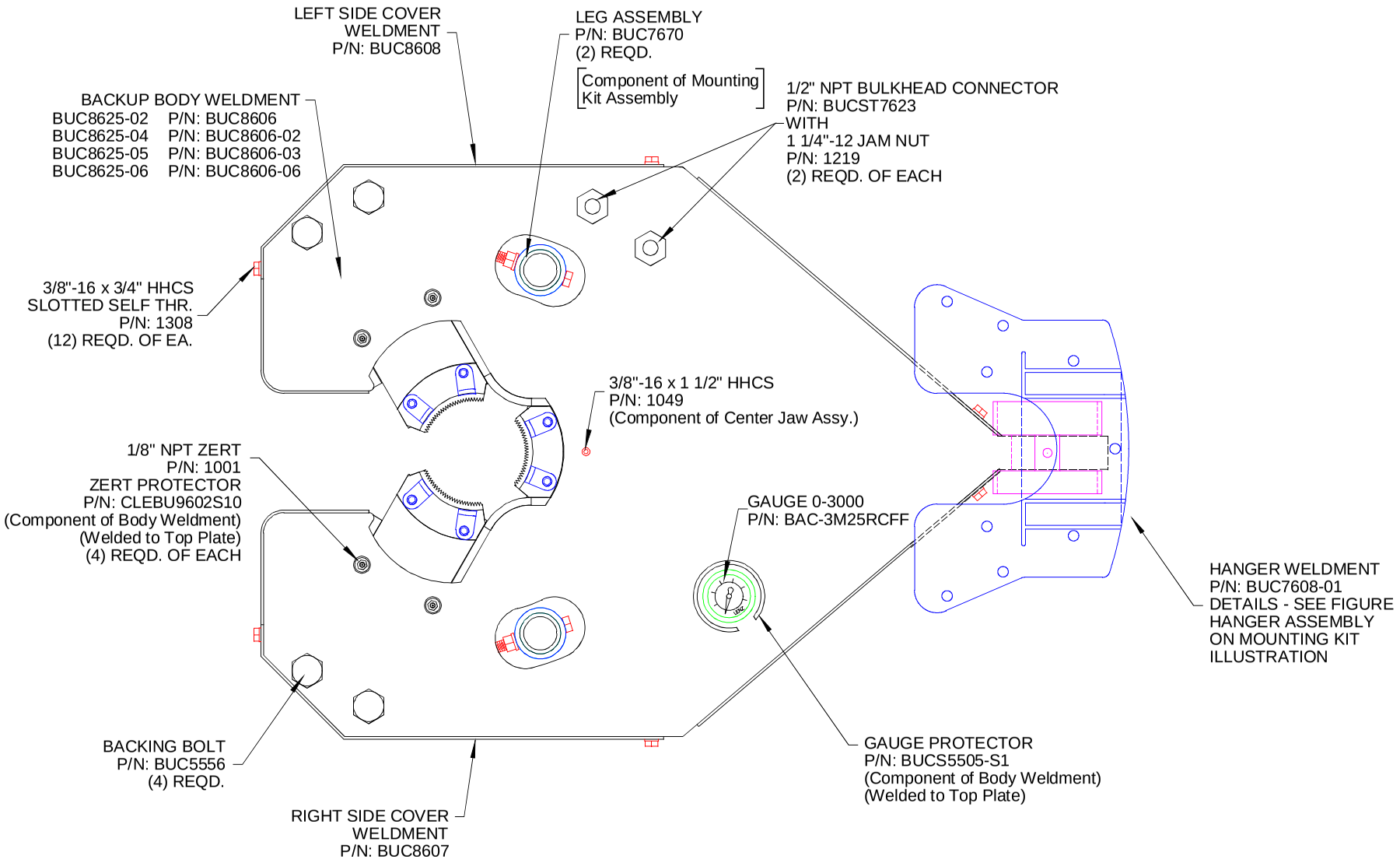
REV. #	LOG #	DATE

SECTION 10 UHT BACKUP ILLUSTRATIONS & MOUNTING KIT ILLUSTRATIONS

8 5/8" UHT BACKUP TOP VIEW ..... 10 - 3
8 5/8" UHT BACKUP TOP VIEW WITHOUT TOP PLATE ..... 10 - 4
8 5/8" UHT BACKUP BOTTOM VIEW ..... 10 - 5
8 5/8" UHT TENSION STYLE BACKUP ASSEMBLY *(Assy. No. BUCT8625)*..... 10 - 5.1
8 5/8" CENTER JAW ASSEMBLY *(Assembly No. BUC8620-01)* ..... 10 - 6
8 5/8" CYLINDER ASSEMBLY *(Assembly No. BUC8623-01)* ..... 10 - 7
8 5/8" BACKUP DOVETAIL DIE ADAPTER..... 10 - 8
8 5/8" UHT BACKUP MOUNTING KIT *(Assembly No. MK7600-02)*..... 10 - 9
VALVE BANK ASSEMBLY..... 10 - 10
MOUNTING KIT 8 5/8" UHT BACKUP BUC8625-02 TO CLE7625UHT-08 *(Assembly No. MK7600-08)* ..... 10 - 10.1
HYDRAULIC SCHEMATIC ..... 10 - 11
HYDRAULIC SCHEMATIC W/ MANIFOLD – MFG. BEGINNING 02/2007..... 10 - 12
HYDRAULIC SCHEMATIC - REMOTE TONG & BACKUP..... 10 - 12.1
7 5/8" UHT BACKUP TOP VIEW ..... 10 - 13
7 5/8" UHT BACKUP TOP VIEW WITHOUT TOP PLATE ..... 10 - 14
7 5/8" UHT BACKUP BOTTOM VIEW ..... 10 - 15
7 5/8" CYLINDER ASSEMBLY *(Assembly No. BUC7623)* ..... 10 - 16
7 5/8" BACKUP DOVETAIL DIE ADAPTER..... 10 - 17
7 5/8" UHT BACKUP MOUNTING KIT *(Assembly No. MK7600)*..... 10 - 18
7 5/8" UHT BACKUP MOUNTING KIT *(Assembly No. MK7600-04)* ..... 10 - 19
7 5/8" TENSION STYLE MOUNTING KIT *(Assy. No. MKBUCT7625-01)*..... 10 - 20



8 5/8" UHT BACKUP
TOP VIEW

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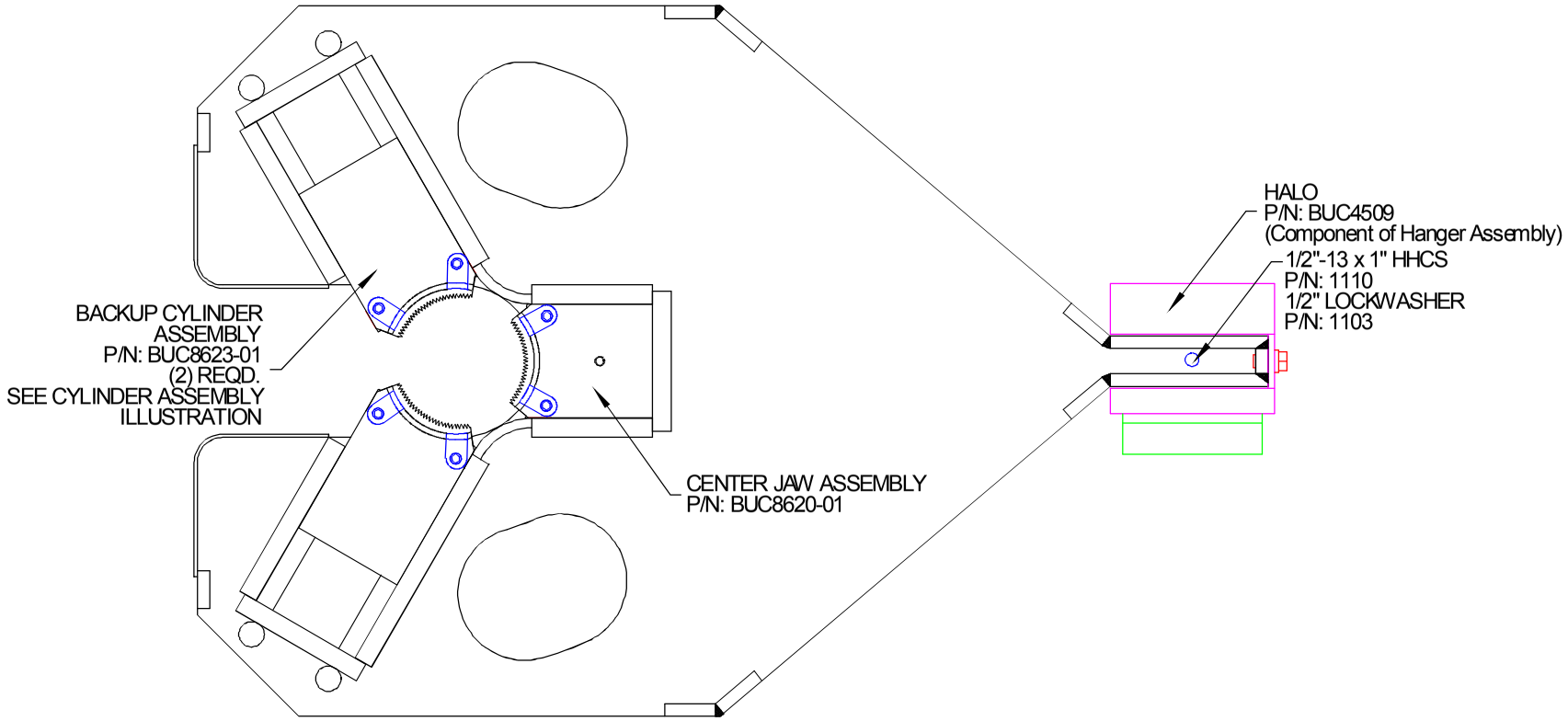
2		02/07/08

REF: P:\Manuals\Equip Manuals\Dwgs\BUC8625-02\Top View rev2.wpg



8 5/8" UHT BACKUP
TOP VIEW WITHOUT TOP PLATE

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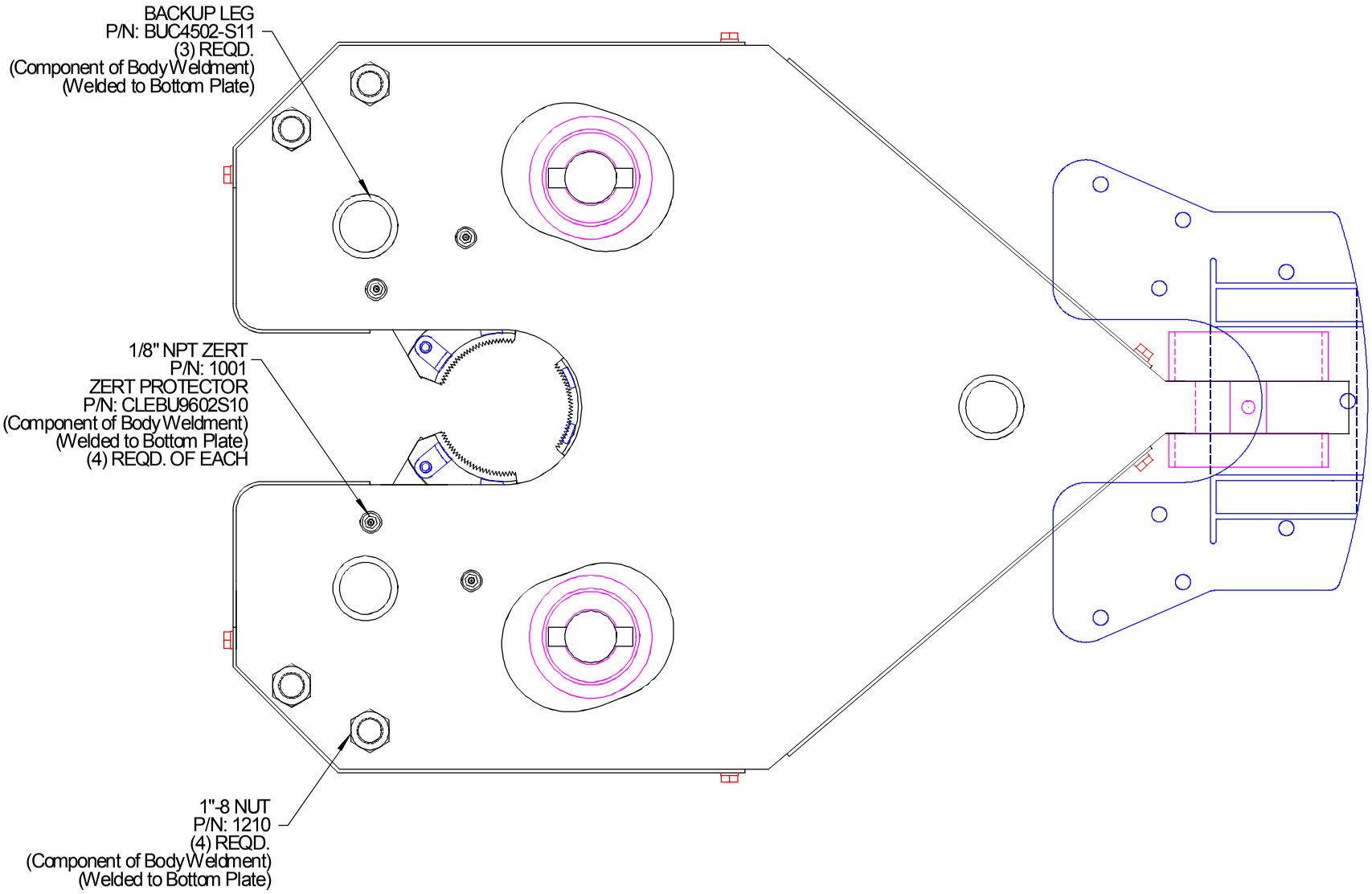
		10/20/04
REV. #	LOG #	DATE

REF: S:\Equip Manuals\Dwgs\BUC8625-02\Top View wo Plate.wpg



8 5/8" UHT BACKUP
BOTTOM VIEW

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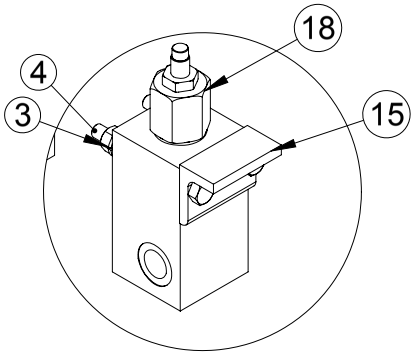
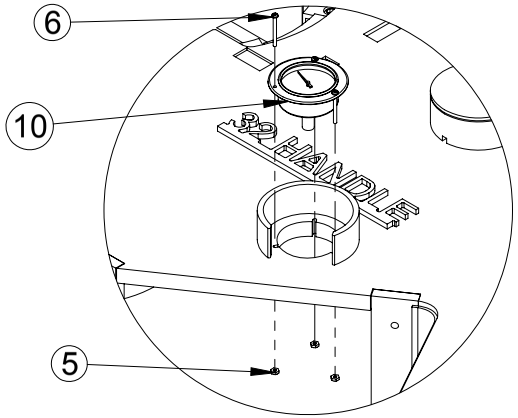
REV. #	LOG #	DATE
		10/20/04

REF: S:\Equip Manuals\Dwgs\BUC8625-02\Bottom View.wpg

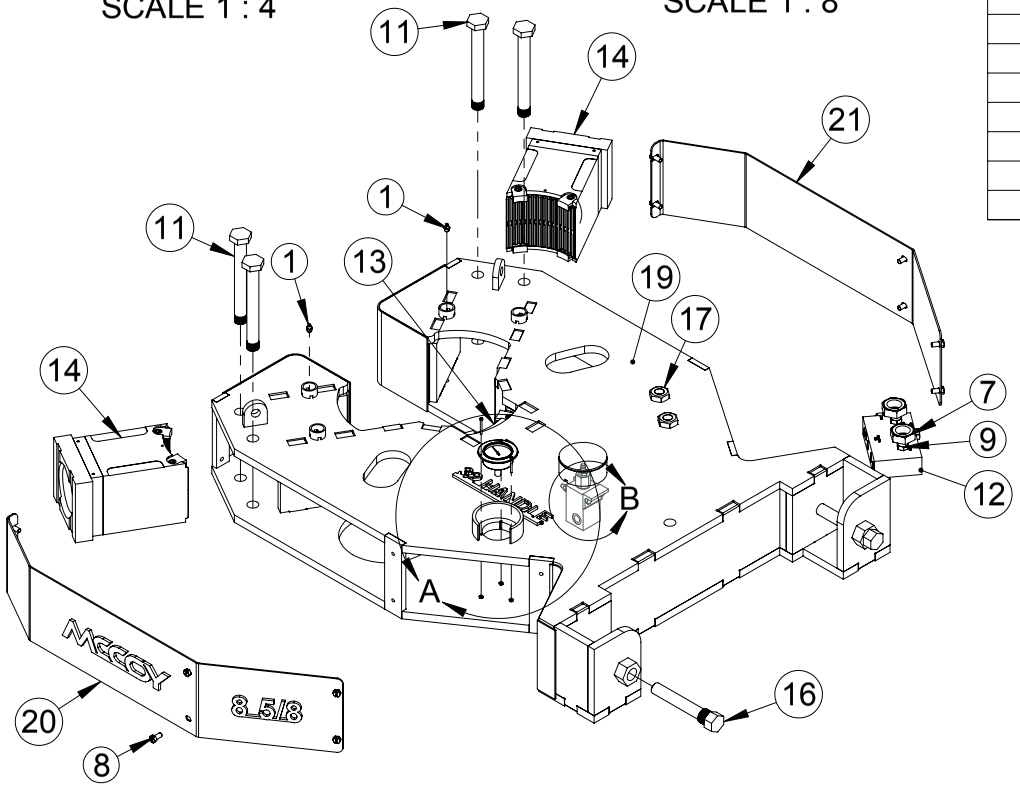


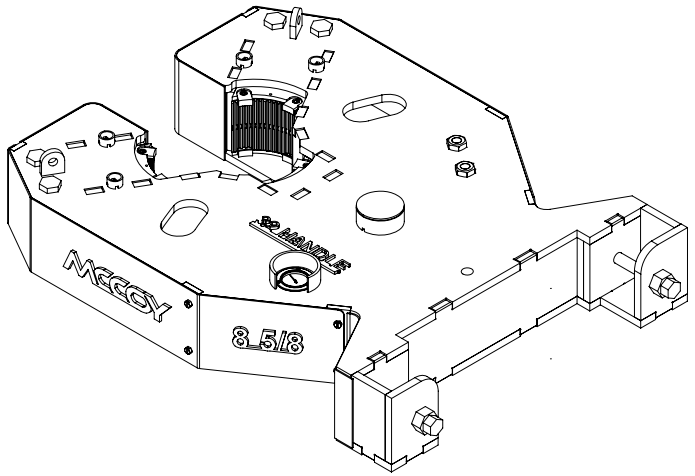
DETAIL B
SCALE 1 : 4



DETAIL A
SCALE 1 : 8

Item #	Qty.	Part Number	Part Name
1	8	1001	1/8 NPT ZERT
2	2	1023-A	5/16-18 HEX NUT
3	2	1023-B	5/16 LOCKWASHER
4	2	1023-C	5/16"-18 X 3" HHCS
5	3	1150-A	#6-32 BRASS NUT
6	3	1150-C	#6-32 X 1 1/2" BRASS BOLT
7	2	1219	1 1/4"-12 JAMNUT
8	12	1308	HHCS 3/8-16 X 3/4 SLOTTED SELF TAPPING
9	2	1460	1/2" HEX NIPPLE
10	1	BAC-3M25RCFF	GAUGE
11	4	BUC5556	BACKING BOLT
12	1	BUC7699	BACKUP MANIFOLD ASSEMBLY
13	1	BUC8620-01	CENTER JAW ASSEMBLY
14	2	BUC8623-01	8 5/8" CYLINDER ASSEMBLY
15	1	BUCI7602-S11	VALVE BRACKET
16	2	BUCM4016	LINE PULL LOAD CELL BACKUP PIN
17	2	BUCST7623	BULKHEAD CONNECTOR
18	1	BUCST7627	1/2" PILOT OPR. RELIEF VALVE
19	1	BUCT8602	8 5/8" TENSION STYLE BACKUP BODY WELDMENT
20	1	BUCT8631	RIGHT COVER WELDMENT
21	1	BUCT8632	LEFT COVER WELDMENT





8 5/8" TENSION STYLE BACKUP ASSEMBLY

ASSEMBLY NO. BUCT8625

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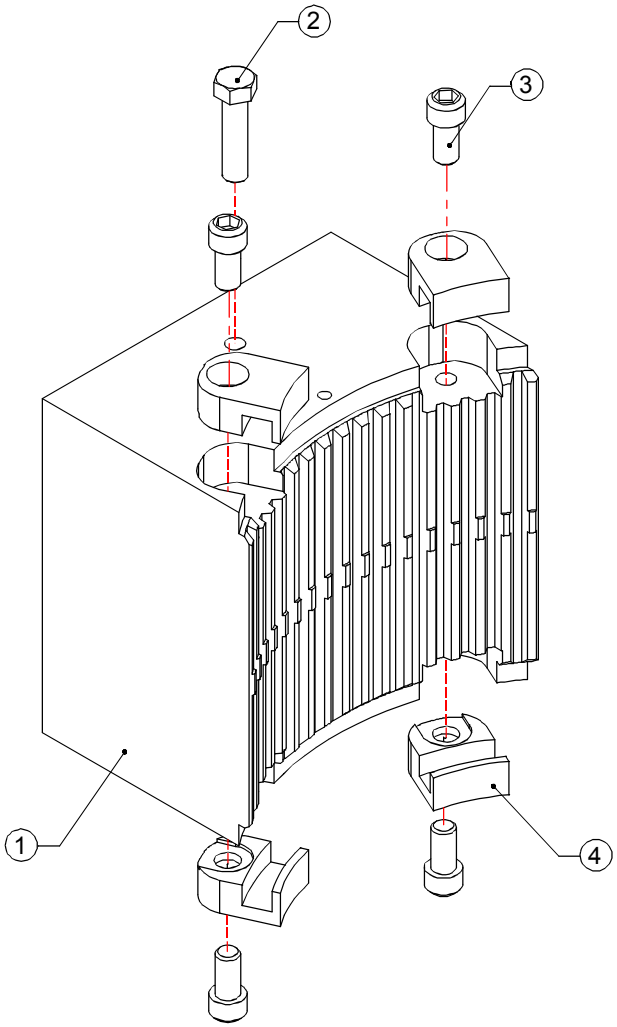
REV. #	LOG #	DATE

BILL OF MATERIALS			
Item	*Qty.*	*P/N*	*Description*
1	1	BUC8619A	CENTER JAW
2	1	1049	3/8"-16 x 1 1/2" HHCS
3	4	1040-A	3/8"-16 x 1 1/4" SHCS
4	4	73064	SPLINE JAW CLIPS



8 5/8" UHT BACKUP CENTER JAW ASSEMBLY

ASSEMBLY NO. BUC8620-01

APPROX. WEIGHT (LBS.) = 36

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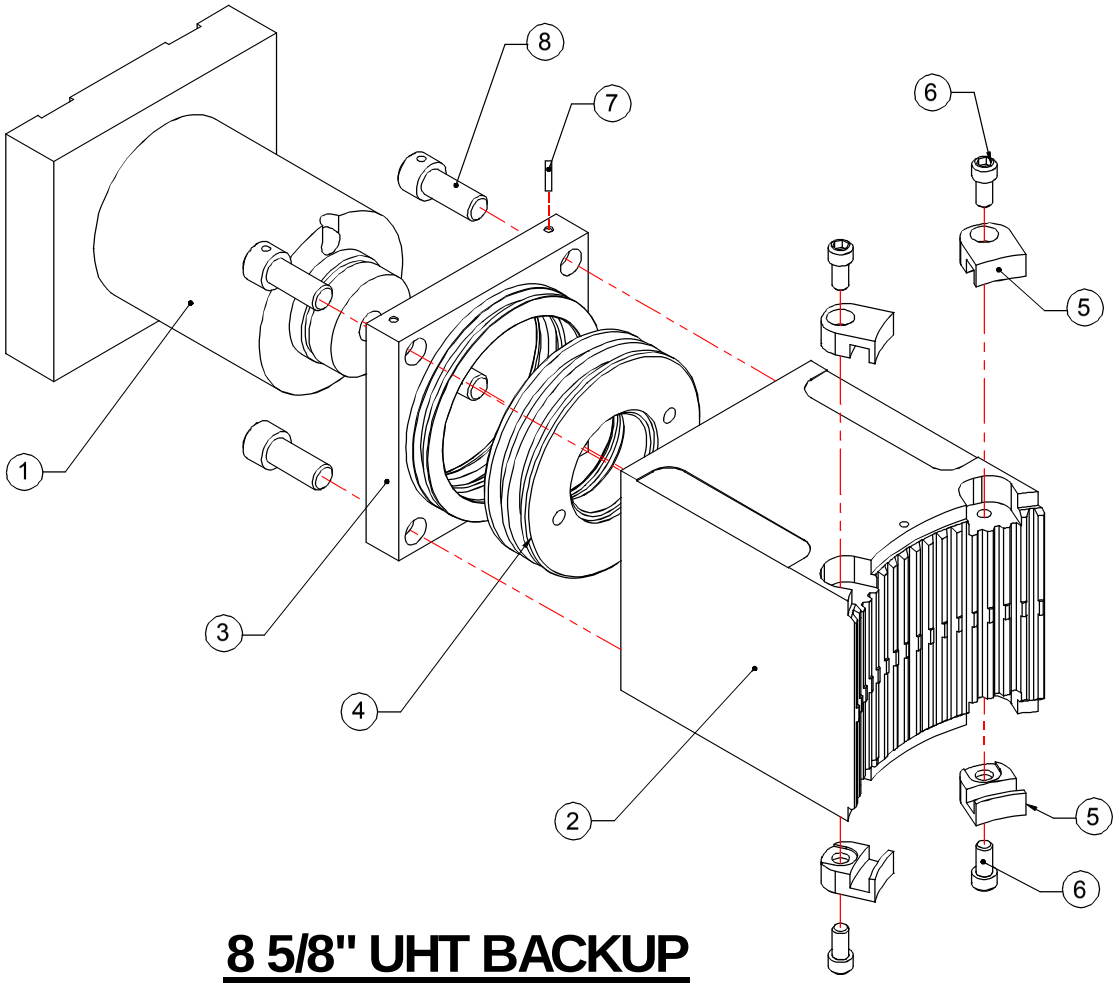
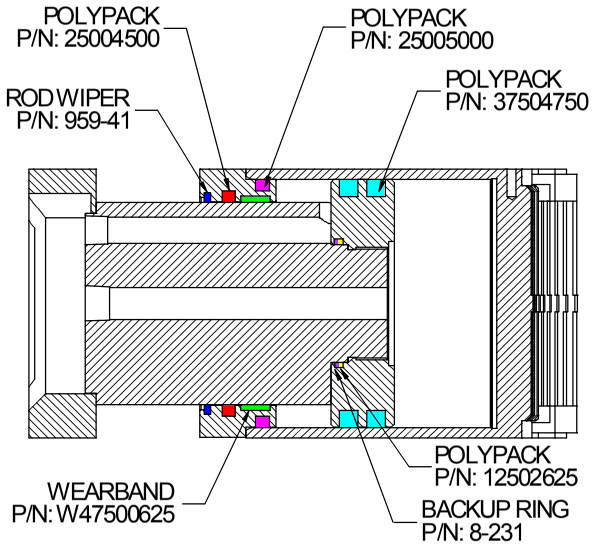
REV. #	LOG #	DATE

REF: S:\Equip Manuals\Dwgs\BUC8625-02\Center Jaw.wpg

BILL OF MATERIALS			
Item	*Qty.*	*P/N*	*Description*
1	1	BUC8626A	ROD/BACKING PLATE WELDMENT
2	1	BUC8631A	8 5/8" BACKUP CYLINDER HOUSING
3	1	BUC5528	GLAND
4	1	BUC5525	PISTON
5	4	73064	SPLINE JAW CLIP
6	4	1040-A	3/8"-16 x 3/4" SHCS
7	4	1005-A	3/16" x 1/2" ROLL PIN
8	4	256	5/8"-11 x 1 1/4" SHCS
9	1	ASAP2226	SEAL KIT





9 SEAL KIT ASAP2226

APPROX. WEIGHT (LBS.) = 77.1

8 5/8" UHT BACKUP CYLINDER ASSEMBLY

ASSEMBLY NO. BUC8623-01

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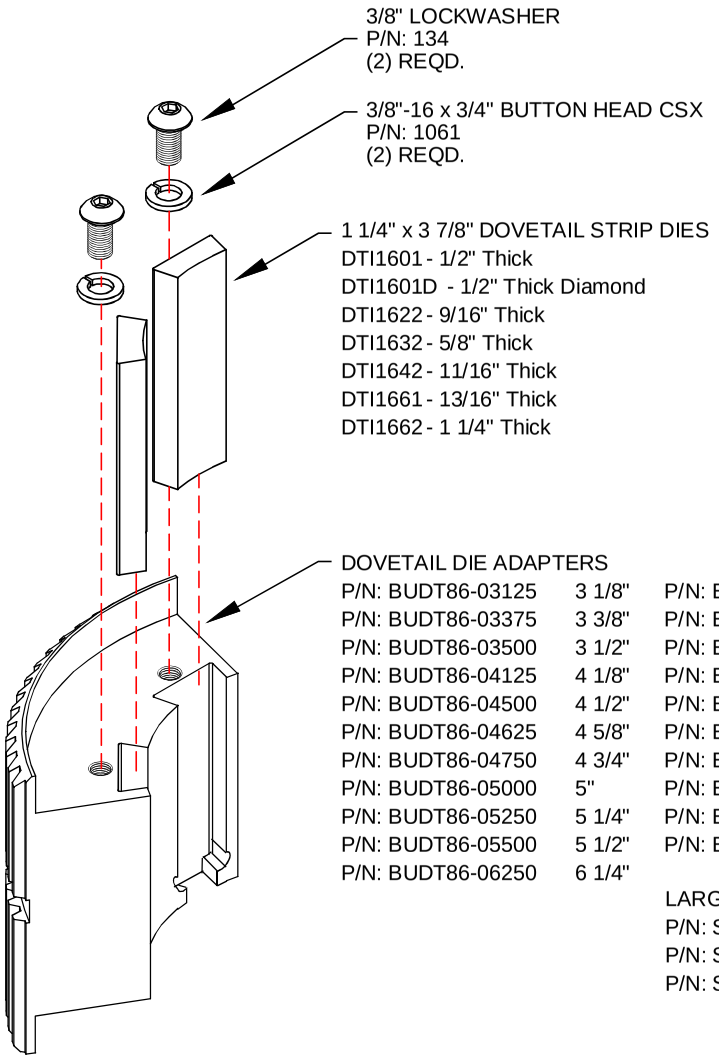
		10/20/04
REV. #	LOG #	DATE

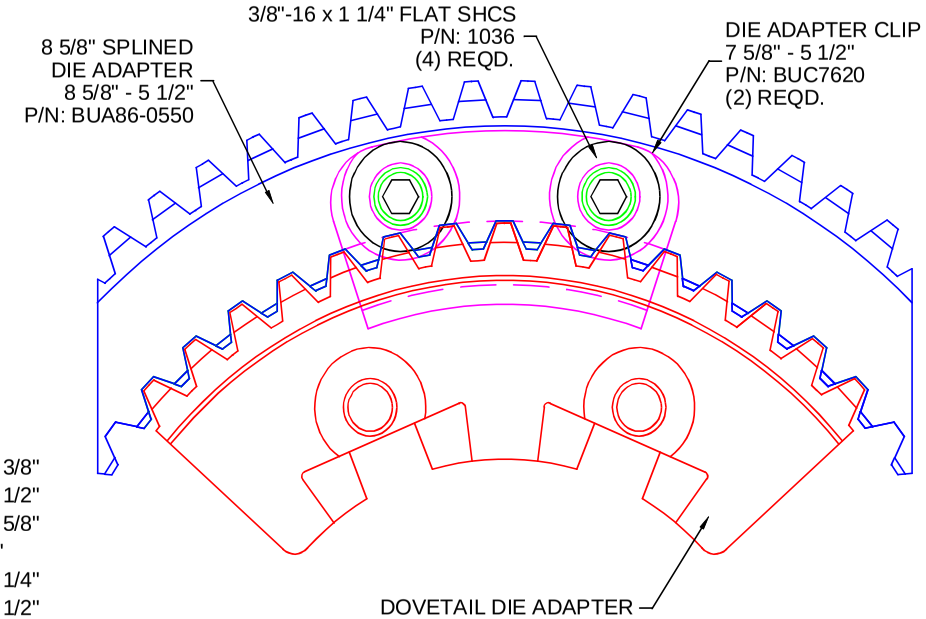
REF: S:\Equip Manuals\Dwgs\BUC8625-02\Cylinder.wpg



P/N: BUDT86-03125	3 1/8"	P/N: BUDT86-06375	6 3/8"
P/N: BUDT86-03375	3 3/8"	P/N: BUDT86-06500	6 1/2"
P/N: BUDT86-03500	3 1/2"	P/N: BUDT86-06625	6 5/8"
P/N: BUDT86-04125	4 1/8"	P/N: BUDT86-07000	7"
P/N: BUDT86-04500	4 1/2"	P/N: BUDT86-07250	7 1/4"
P/N: BUDT86-04625	4 5/8"	P/N: BUDT86-07500	7 1/2"
P/N: BUDT86-04750	4 3/4"	P/N: BUDT86-07625	7 5/8"
P/N: BUDT86-05000	5"	P/N: BUDT86-07812	7 13/16"
P/N: BUDT86-05250	5 1/4"	P/N: BUDT86-08000	8"
P/N: BUDT86-05500	5 1/2"	P/N: BUDT86-08250	8 1/4"
P/N: BUDT86-06250	6 1/4"		

LARGER THAN 8 1/4"

P/N: SDI86-8500	8 1/2"
P/N: SDI86-8625	8 5/8"
P/N: SDI86-8750	8 3/4"



P/N: BUDT55-02375	2 3/8"	P/N: BUDT55-04125	4 1/8"
P/N: BUDT55-02875	2 7/8"	P/N: BUDT55-04250	4 1/4"
P/N: BUDT55-03125	3 1/8"	P/N: BUDT55-04500	4 1/2"
P/N: BUDT55-03375	3 3/8"	P/N: BUDT55-04750	4 3/4"
P/N: BUDT55-03500	3 1/2"	P/N: BUDT55-04875	4 7/8"
P/N: BUDT55-03625	3 5/8"	P/N: BUDT55-05000	5"
P/N: BUDT55-03750	3 3/4"	P/N: BUDT55-05125	5 1/8"
P/N: BUDT55-03875	3 7/8"	P/N: BUDT55-05250	5 1/4"
P/N: BUDT55-04000	4"	P/N: BUCX55005500	5 1/2"

8 5/8" BACKUP
DOVETAIL DIE ADAPTER

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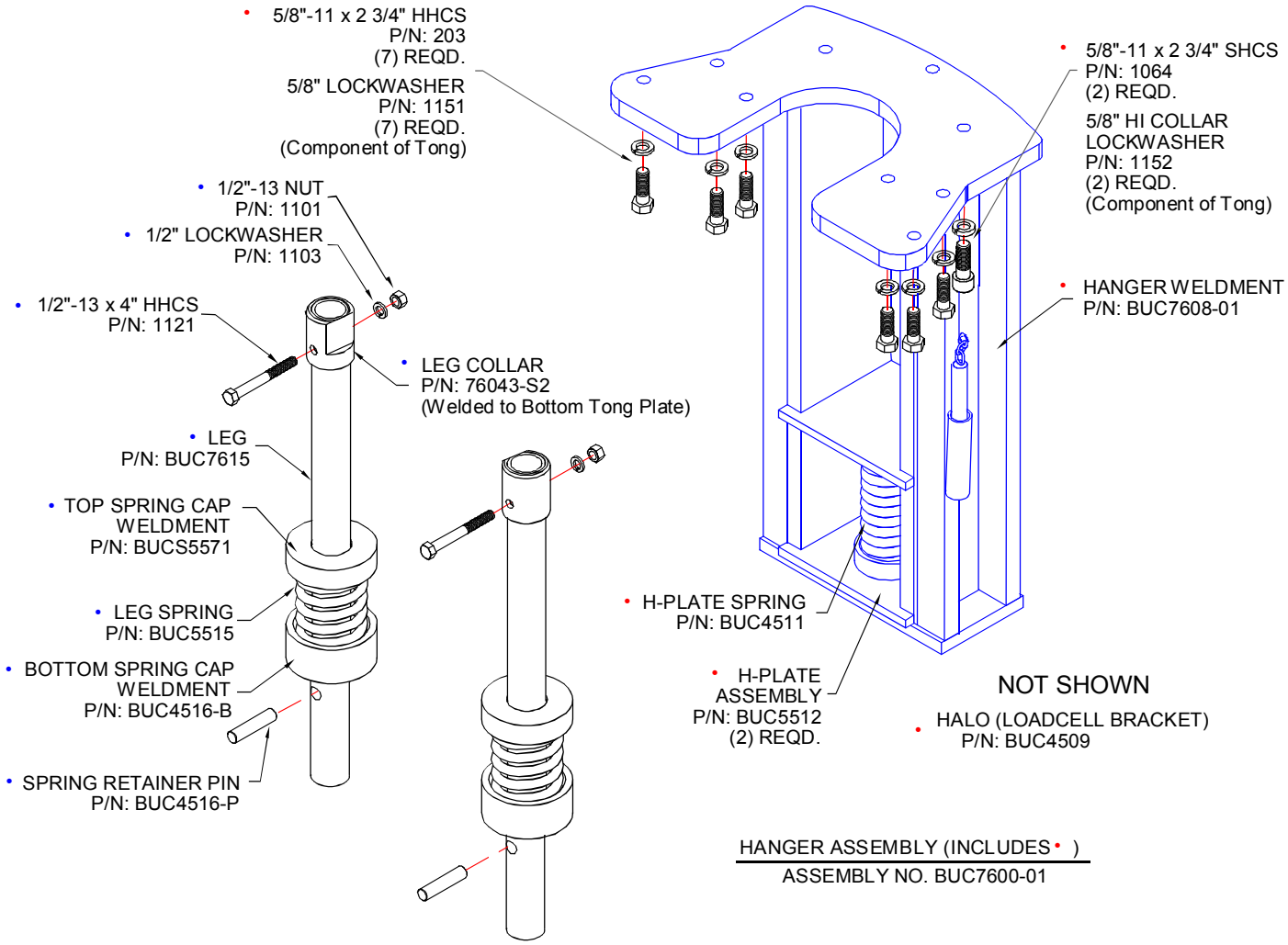
1		02/07/08
REV. #	LOG #	DATE

REF: P:\Manuals\Equip Manuals\Dwgs\BUC8625-02\Die Adapter rev1.wpg

NOT SHOWN:

SEE VALVE BANK ASSEMBLY

A-35 VALVE PACKAGE
P/N: VP7625UHT-02
OR
A-20 VALVE PACKAGE
P/N: VP7625UHT



LEG ASSEMBLY (INCLUDES •)
ASSEMBLY NO. BUC7670

HANGER ASSEMBLY (INCLUDES •)
ASSEMBLY NO. BUC7600-01

MOUNTING KIT ASSEMBLY
8 5/8" UHT BACKUP
TO 7 5/8" UHT TONG

ASSEMBLY NO. MK7600-02

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REV. #	LOG #	DATE
		10/21/04

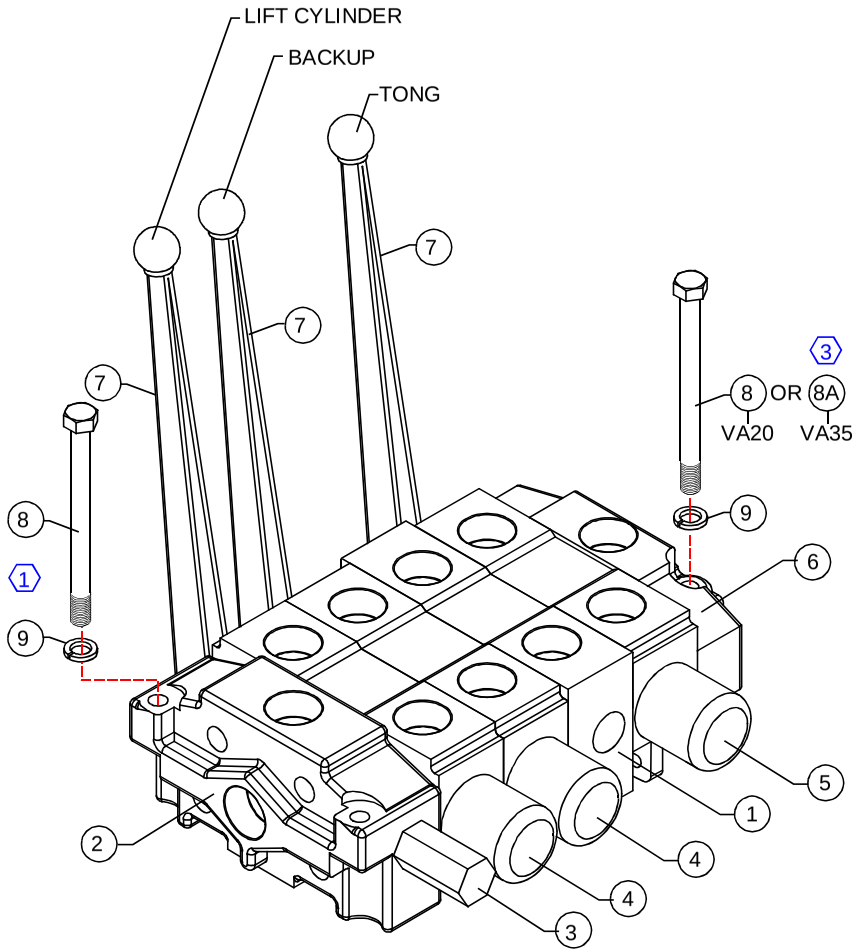
REF: S:\Equip Manuals-Dwgs\BUC8625-02\Mounting Kit.wpg

A20 VALVE BANK ASSEMBLY

Item #	Qty.	Part Number	Description
1	1	55201	CONTROL VALVE ASSEMBLY - MODIFIED VA20-WDA3
			(MFG. BEFORE 04/15/04)
2 OR	1	VA20-MOD	WORK SECTION (MFG. AFTER 04/15/04)
5 6 OR	1	86049	LOGIC VALVE ASSEMBLY (MFG. AFTER 05/2006)
2	1	VA20-AA440	INLET VALVE W/O RELIEF
3	1	VA20-MRV-1	RELIEF CARTRIDGE
4	2	VA20-DA3	WORK SECTION
5	1	VA20-MA3	WORK SECTION
6	1	VA20-TR44	OUTLET SECTION
1 7	3	A20-V1526K-8	A20 8" HANDLE
1 8	3	1072	HHCS 3/8"-16 x 3 3/4" (COMPONENT OF KIT P/N: 4 BANK)
9	3	134	LOCKWASHER 3/8" (COMPONENT OF KIT P/N: 4 BANK)

A35 VALVE BANK ASSEMBLY

Item #	Qty.	Part Number	Description
1	1	14213	CONTROL VALVE ASSEMBLY - MODIFIED VA35-WDA4
			(MFG. BEFORE 04/15/04)
2 OR	1	VA35-MOD	WORK SECTION ASSEMBLY (MFG. AFTER 04/15/04)
5 6 OR	1	86049	LOGIC VALVE ASSEMBLY (MFG. AFTER 05/2006)
2	1	VA35-AA440	INLET VALVE W/O RELIEF
3	1	DVG35-HMRV 4	RELIEF CARTRIDGE
4	2	VA35-DA4	WORK SECTION
5	1	VA35-MA4	WORK SECTION
6	1	VA35-TR55	OUTLET SECTION
7	3	A35-V1526K-8	A35 8" HANDLE
1 8	2	X2-40 3	HHCS 1/2"-13 x 4 1/4" 3
3 8A	1	X2-45	HHCS 1/2"-13 x 4 1/2"
1 9 3	3	1103	LOCKWASHER 1/2"



Rev.	Date	Description
6	11/28/07	Item 1 - Replaced 86051 & 86052 w/Assy. 86049 for Mfg. after 05/2006.
5	10/29/07	Item 1 - Added 86051 & 86052 for Production after 05/2006.
4	08/19/05	Item 3 - Chg.PN from A35-MRV-1 to DVG35-HMRV; ECN#05-0064.
3	12/13/04	Item 8 - Chg. Length from 5" to 4 1/4". PN from X2-79 to X2-40.
		Item 8A - Added Part. Item 9 - Chg. Qty. from 2 to 3.
2	10/21/04	Item 1 - Added VA20-MOD & VA35-MOD for Production after 04/15/04.
1	06/10/02	Item 8 & 9 - Added Part.

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REV. #	LOG #	DATE
6		11/28/07

REF: P:\Manuals\Equip Manuals\Dwgs\Valves\Valve Bank 4 rev6.wpg

VALVE BANK ASSEMBLY

LEG ASSEMBLY NO. BUC7670-04

Item #	Qty.	Part Number	Part Name
1	1	BUC4516-B	BOTTOM SPRING CAP WELDM.
2	1	BUC4516-P	SPRING RETAINER PIN
3	1	BUC5515	LEG SPRING
4	1	BUC7615-04	7 5/8" TONG LEG (5" LONGER)
5	1	BUCS5571	TOP SPRING CAP WELDMENT
6	1	1121	HHCS 1/2"-13 x 4"
7	1	1103	1/2" LOCK WASHER
8	1	1101	1/2"-13 HEX NUT

HANGER ASSEMBLY NO. BUC7600-04

Item #	Qty.	Part Number	Part Name
2	2	BUC5512	H-PLATE WELDMENT
3	1	BUC4511	SPRING
4	9	203	5/8"-11 x 2 3/4" HHCS
5	1	BUC4509	HALO (LOAD CELL BRACKET)
6	1	1110	1/2"-13 x 1" HHCS
7	9	1151	5/8" LOCK WASHER
8	1	BUC7608-04	HANGER WELDMENT

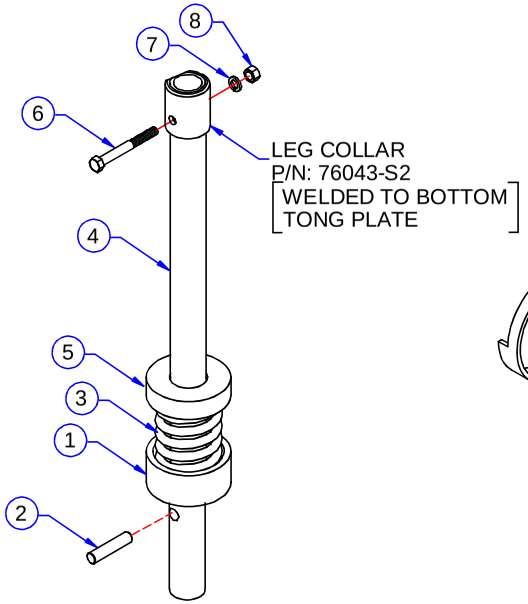
MOUNTING KIT ASSEMBLY NO. MK7600-08

Item #	Qty.	Part Number	Part Name
1	1	BUC7600-04	HANGER ASSEMBLY
2	2	BUC7670-04	LEG ASSEMBLY

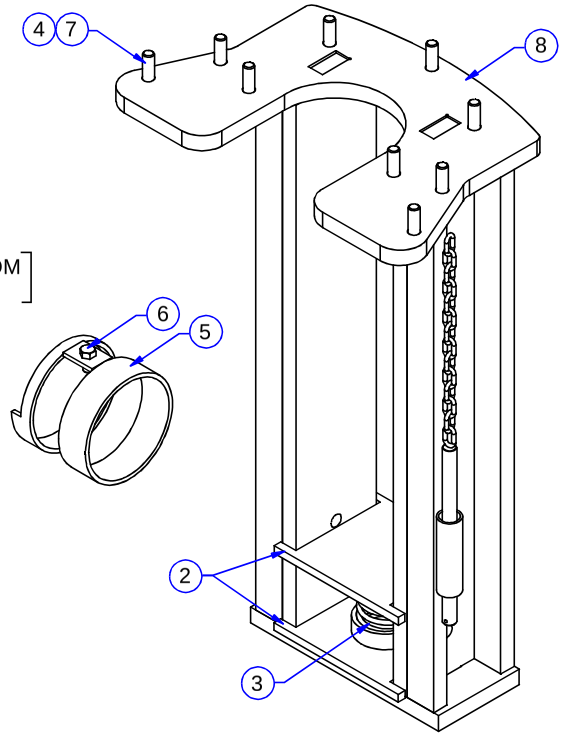
NOT SHOWN:

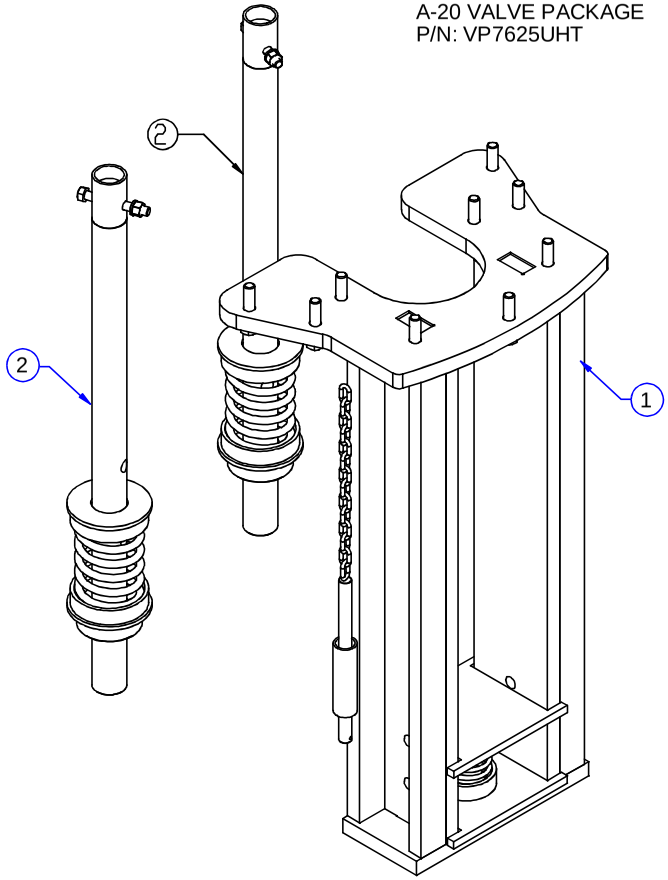
SEE VALVE BANK ASSEMBLY

A-35 VALVE PACKAGE
P/N: VP7625UHT-02
OR
A-20 VALVE PACKAGE
P/N: VP7625UHT



LEG COLLAR
P/N: 76043-S2
WELDED TO BOTTOM
TONG PLATE





MOUNTING KIT ASSEMBLY
8 5/8" UHT BACKUP BUC8625-02
TO 7 5/8" UHT TONG CLE7625UHT-08

ASSEMBLY NO. MK7600-08

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		09/11/07
REV. #	LOG #	DATE

REF: P:\Manuals\Equip Manuals\Dwgs\BUC8625-02\MK7600-08.wpg

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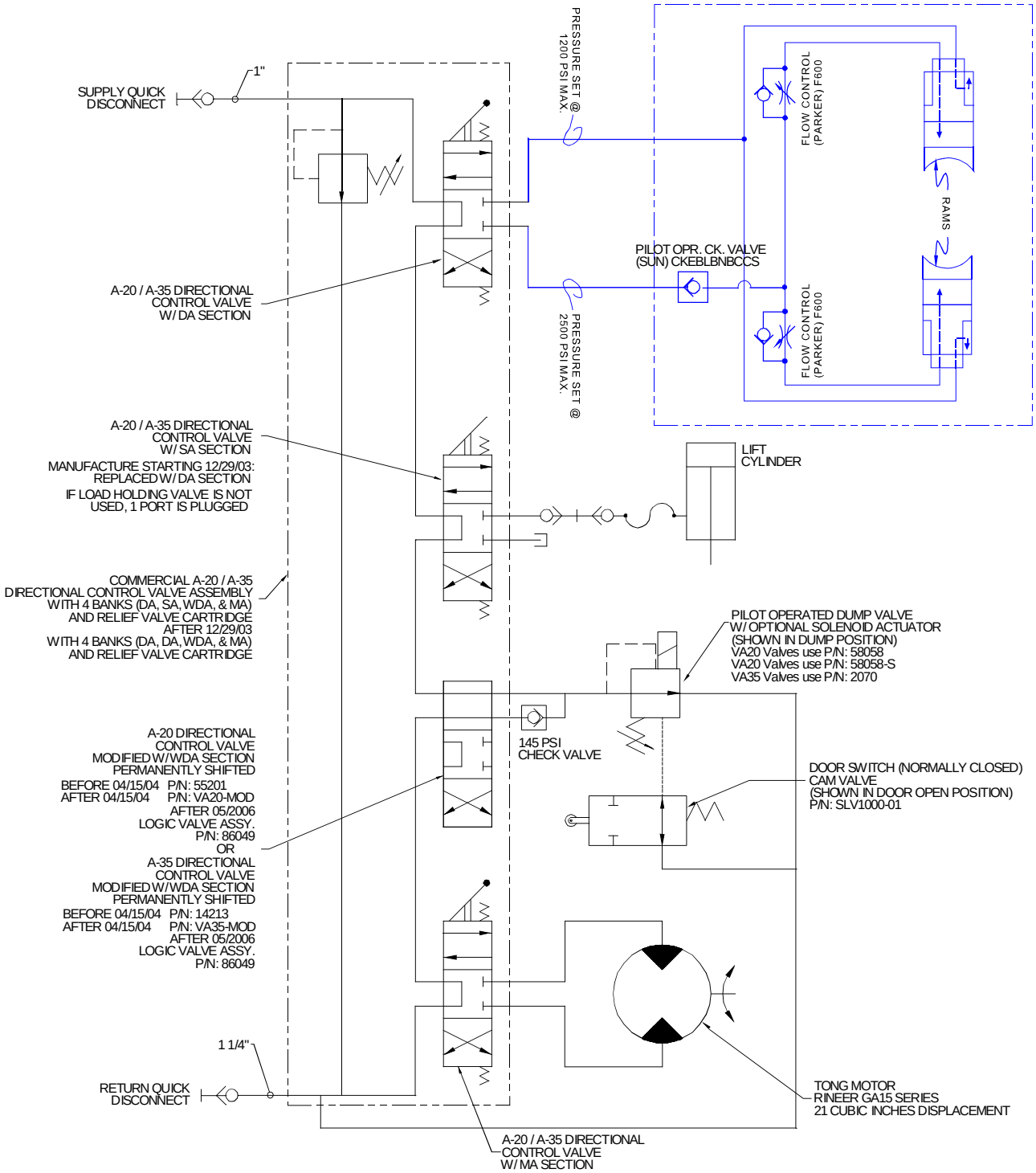
UHT TONG **UHT BACKUP**

SPECIAL NOTE: IF VALVE SECTION "COMMERCIAL SHEARING" DA-53 IS TO BE SUBSTITUTED, CYLINDER SPOOL MUST BE USED.


SUPPLY QUICK DISCONNECT
1"
PRESSURE SET @ 1200 PSI MAX.
FLOW CONTROL (PARKER) F600
RAMS
PILOT OPR. CK. VALVE (SUN) CKEBLBNBCCS
A-20 / A-35 DIRECTIONAL CONTROL VALVE W/ DA SECTION
PRESSURE SET @ 2500 PSI MAX.
FLOW CONTROL (PARKER) F600
A-20 / A-35 DIRECTIONAL CONTROL VALVE W/ SA SECTION
MANUFACTURE STARTING 12/29/03: REPLACED W/ DA SECTION
IF LOAD HOLDING VALVE IS NOT USED, 1 PORT IS PLUGGED
LIFT CYLINDER
COMMERCIAL A-20 / A-35 DIRECTIONAL CONTROL VALVE ASSEMBLY WITH 4 BANKS (DA, SA, WDA, & MA) AND RELIEF VALVE CARTRIDGE AFTER 12/29/03 WITH 4 BANKS (DA, DA, WDA, & MA) AND RELIEF VALVE CARTRIDGE
PILOT OPERATED DUMP VALVE W/ OPTIONAL SOLENOID ACTUATOR (SHOWN IN DUMP POSITION)
VA20 Valves use P/N: 58058
VA20 Valves use P/N: 58058-S
VA35 Valves use P/N: 2070
145 PSI CHECK VALVE
DOOR SWITCH (NORMALLY CLOSED) CAM VALVE (SHOWN IN DOOR OPEN POSITION)
P/N: SLV1000-01
A-20 DIRECTIONAL CONTROL VALVE MODIFIED W/WDA SECTION PERMANENTLY SHIFTED
BEFORE 04/15/04 P/N: 55201
AFTER 04/15/04 P/N: VA20-MOD
AFTER 05/2006 LOGIC VALVE ASSY. P/N: 86049
OR
A-35 DIRECTIONAL CONTROL VALVE MODIFIED W/WDA SECTION PERMANENTLY SHIFTED
BEFORE 04/15/04 P/N: 14213
AFTER 04/15/04 P/N: VA35-MOD
AFTER 05/2006 LOGIC VALVE ASSY. P/N: 86049
1 1/4"
RETURN QUICK DISCONNECT
TONG MOTOR
RINEER GA15 SERIES
21 CUBIC INCHES DISPLACEMENT
A-20 / A-35 DIRECTIONAL CONTROL VALVE W/ MA SECTION

BASIC HYDRAULIC SCHEMATIC

UHT TONG
UHT BACKUP

NOTE: NUMEROUS FITTINGS, HOSES, & NIPPLES ARE NOT ILLUSTRATED IN THIS SCHEMATIC

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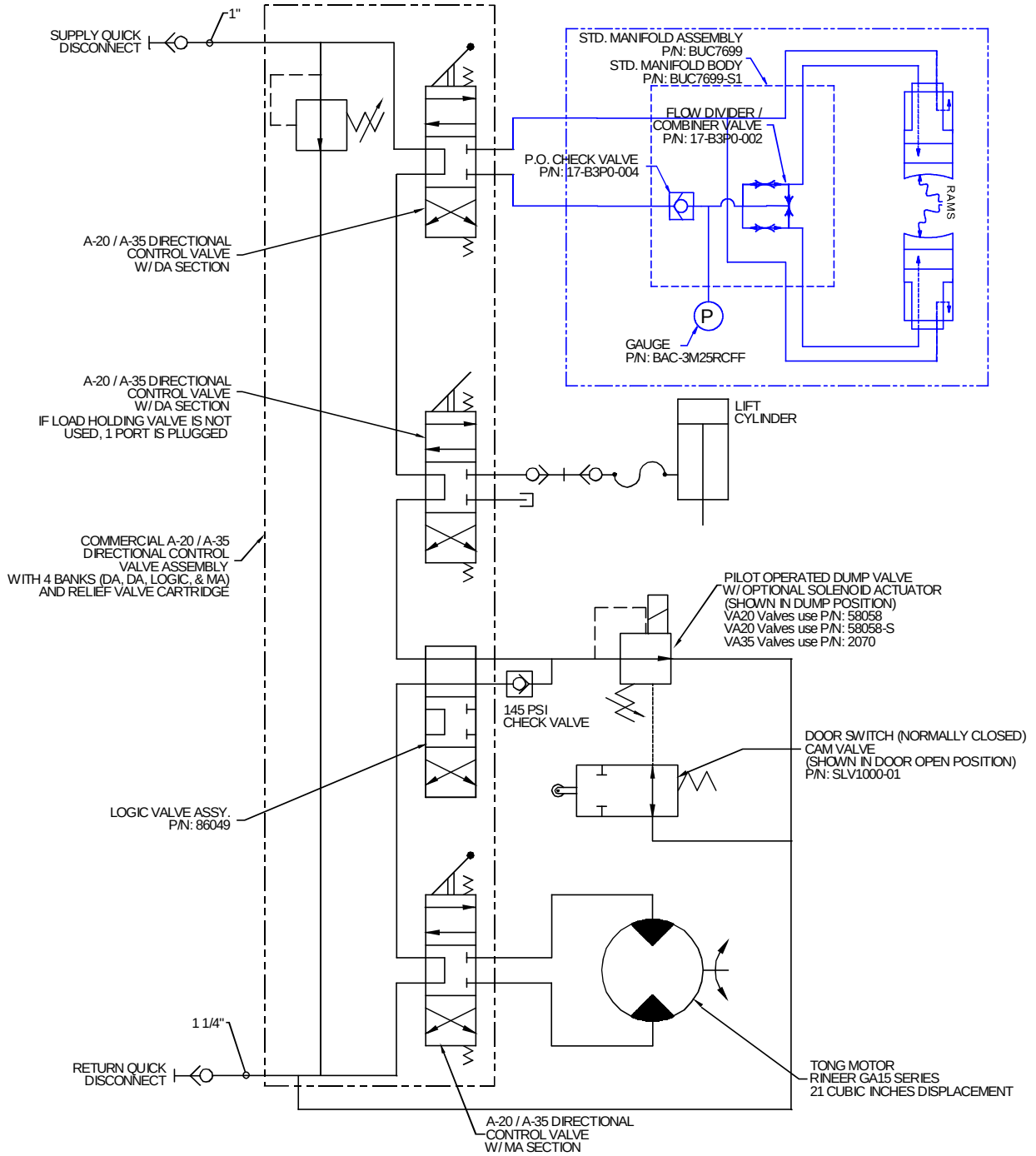
REV. #	LOG #	DATE
4		02/07/08

REF: P:\Manuals\Equip Manuals\Dwgs\BUC5500\Hyd Sch rev4.wpg

UHT TONG **UHT BACKUP**

SPECIAL NOTE: IF VALVE SECTION "COMMERCIAL SHEARING" DA-53 IS TO BE SUBSTITUTED, CYLINDER SPOOL MUST BE USED.


1"
SUPPLY QUICK DISCONNECT
STD. MANIFOLD ASSEMBLY P/N: BUC7699
STD. MANIFOLD BODY P/N: BUC7699-S1
FLOW DIVIDER / COMBINER VALVE P/N: 17-B3P0-002
P.O. CHECK VALVE P/N: 17-B3P0-004
RAMS
A-20 / A-35 DIRECTIONAL CONTROL VALVE W/ DA SECTION
P
GAUGE P/N: BAC-3M25RCFF
A-20 / A-35 DIRECTIONAL CONTROL VALVE W/ DA SECTION IF LOAD HOLDING VALVE IS NOT USED, 1 PORT IS PLUGGED
LIFT CYLINDER
COMMERCIAL A-20 / A-35 DIRECTIONAL CONTROL VALVE ASSEMBLY WITH 4 BANKS (DA, DA, LOGIC, & MA) AND RELIEF VALVE CARTRIDGE
PILOT OPERATED DUMP VALVE W/ OPTIONAL SOLENOID ACTUATOR (SHOWN IN DUMP POSITION) VA20 Valves use P/N: 58058 VA20 Valves use P/N: 58058-S VA35 Valves use P/N: 2070
145 PSI CHECK VALVE
DOOR SWITCH (NORMALLY CLOSED) CAM VALVE (SHOWN IN DOOR OPEN POSITION) P/N: SLV1000-01
LOGIC VALVE ASSY. P/N: 86049
1 1/4"
RETURN QUICK DISCONNECT
TONG MOTOR RINEER GA15 SERIES 21 CUBIC INCHES DISPLACEMENT
A-20 / A-35 DIRECTIONAL CONTROL VALVE W/ MA SECTION

BASIC HYDRAULIC SCHEMATIC

UHT TONG & UHT BACKUP

MANUFACTURE BEGINNING 02/2007

NOTE: NUMEROUS FITTINGS, HOSES, & NIPPLES ARE NOT ILLUSTRATED IN THIS SCHEMATIC

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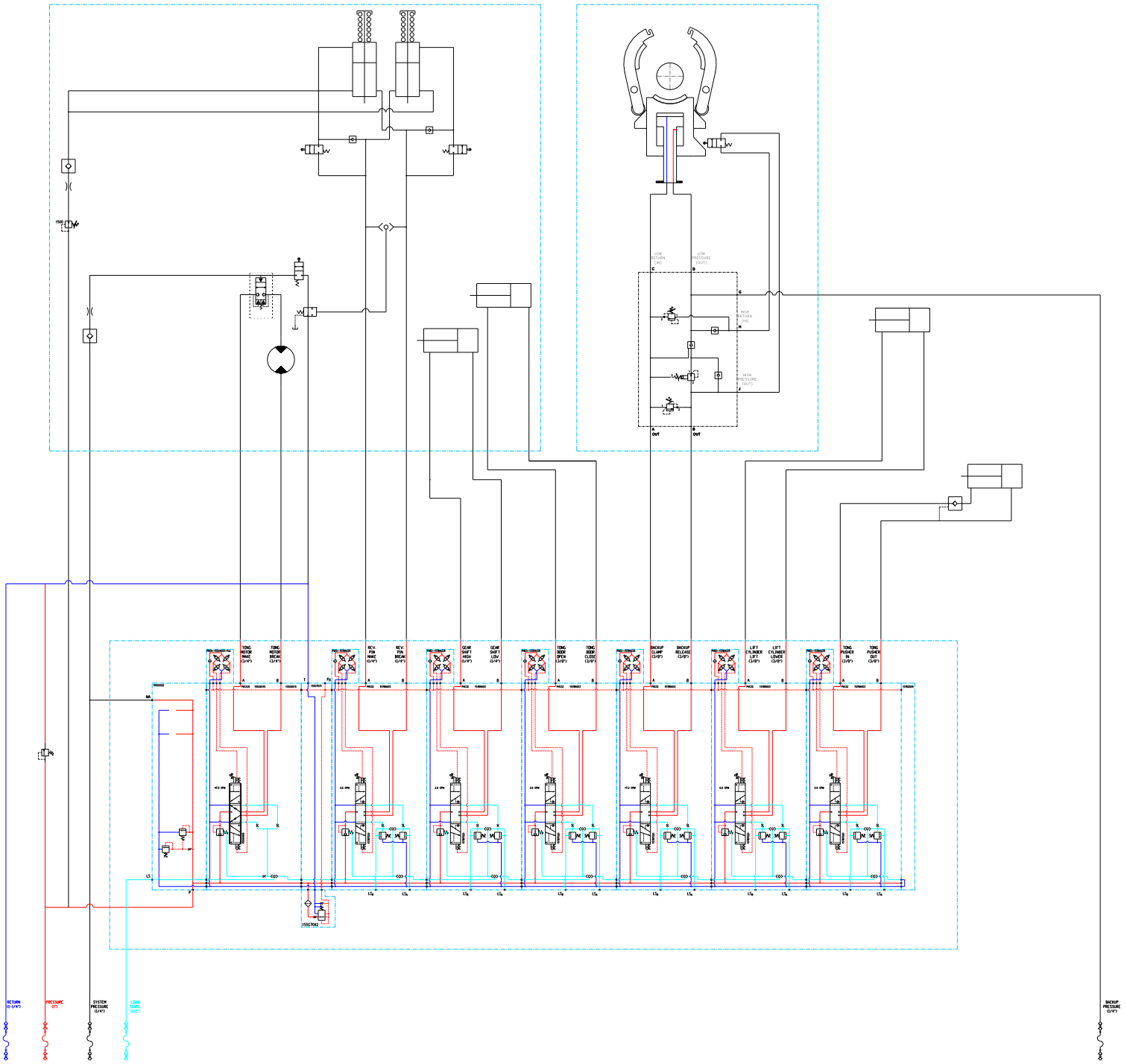
		02/07/08
REV. #	LOG #	DATE

REF: P:\Manuals\Equip Manuals\Dwgs\BUC5500\HS wManifold.wpg



CLE7625UHT-09 & BUCT8625 HYDRAULIC SCHEMATIC

MCCOY | DRILLING & COMPLETIONS
MOVING GLOBAL ENERGY FORWARD
SUPERIOR MANUFACTURING & HYDRAULICS

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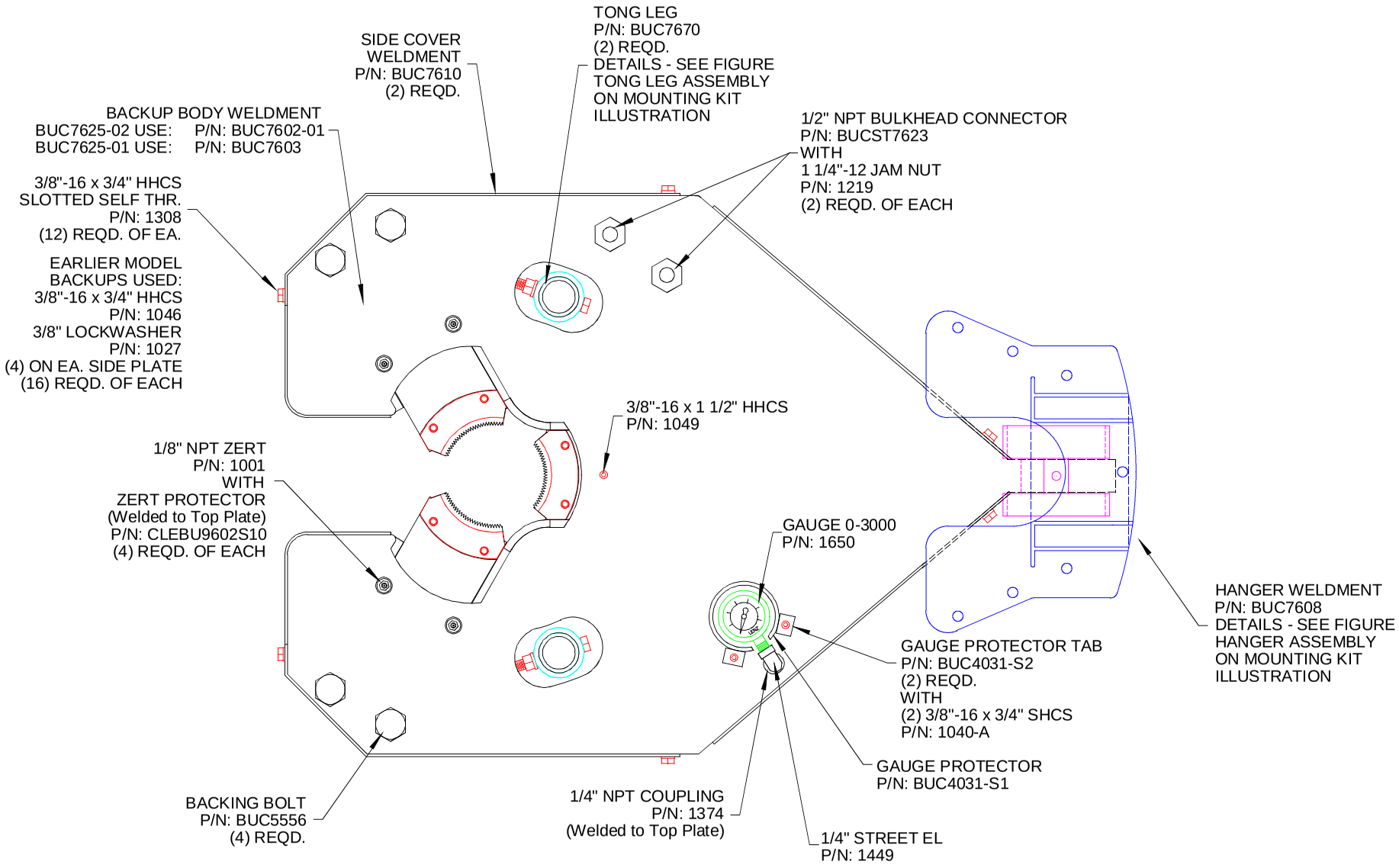
REV. #	LOG #	DATE



7 5/8" UHT BACKUP
TOP VIEW

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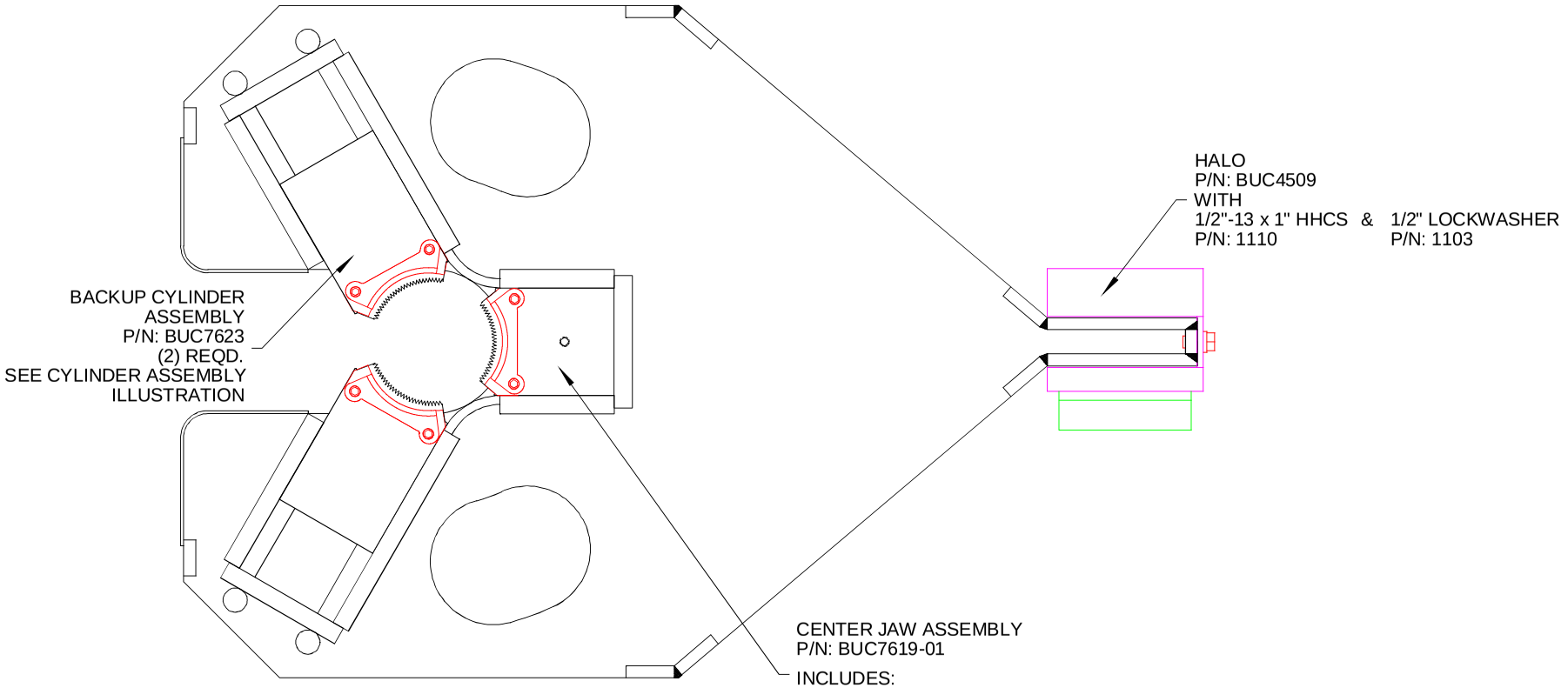
REV. #	LOG #	DATE
2		02/07/05

REF: P:\Manuals\Equip Manuals\Dwgs\BUC7625\Top View rev2.wpg



7 5/8" UHT BACKUP
TOP VIEW WITHOUT TOP PLATE

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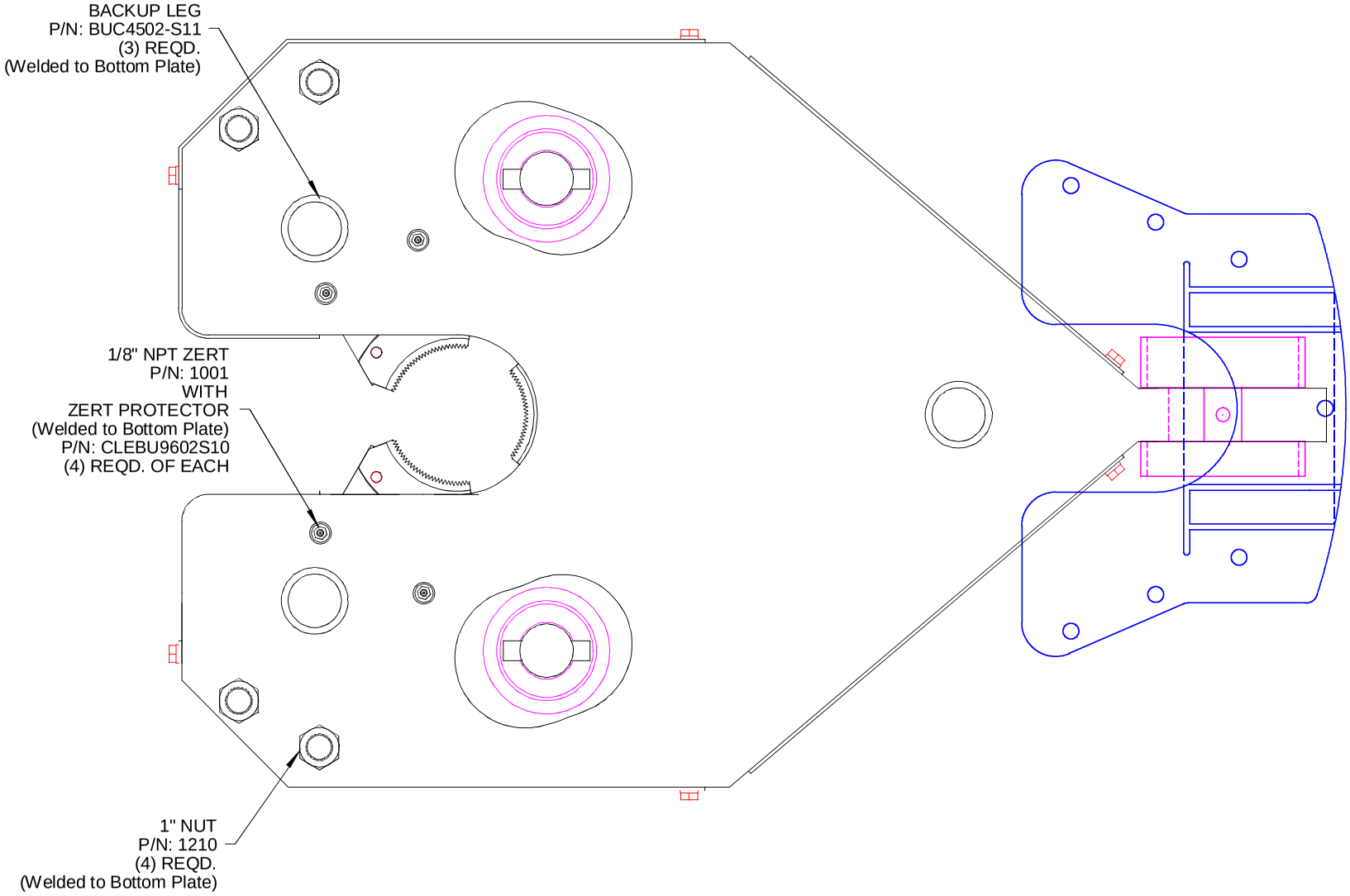
REV. #	LOG #	DATE
1		06/11/04

REF: P:\Manuals\Equip Manuals\Dwgs\BUC7625\Top View wo Plate rev1.wpg



7 5/8" UHT BACKUP
BOTTOM VIEW

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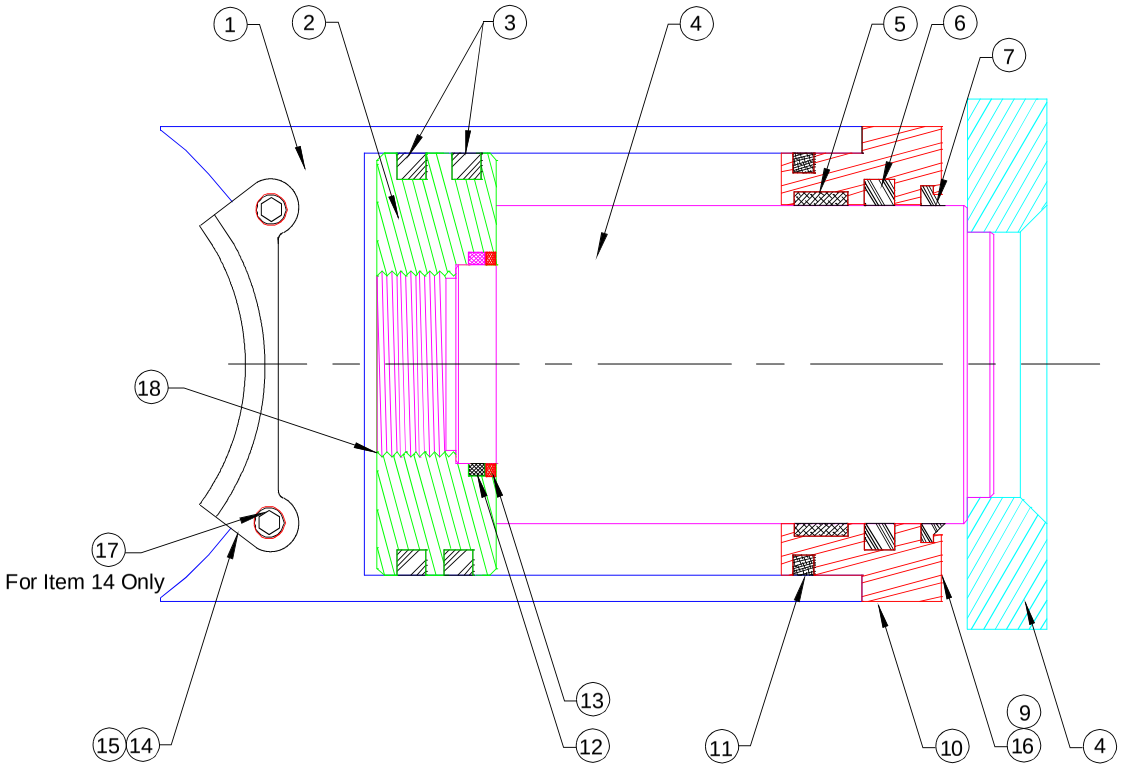
		03/29/04
REV. #	LOG #	DATE

REF: P:\Manuals\Equip Manuals\Dwgs\BUC7625\Bottom View.wpg

★ SEAL KIT NO. ASAP2226

	BILL OF MATERIALS			
	Item	*Qty.*	*P/N*	*Description*
	1	1	BUC7665	Cylinder Housing Weldment
	2	1	BUC5525	Piston
★	3	2	37504750	Polypack 4 3/4" x 5 1/2" x 3/8"
	4	1	BUC7626	Rod Backing Plate Weldment
★	5	1	W47500625	Wearband
★	6	1	25004500	Polypack 4 1/2" x 5" x 1/4"
★	7	1	959-41	Rod Wiper
	8	- -	- - - - -	- - - - -
	9	4	256	5/8"-11 x 1 1/4" SHCS
	10	1	BUC5528	Gland
★	11	1	25005000	Polypack 5" x 5 1/2" x 1/4"
★	12	1	12502625	Polypack 2 5/8" x 2 7/8" x 1/8"
★	13	1	8-231	Backup Ring
	14	1	CM7656-01	Die Clip (Top)
	15	1	CM7656-01	Die Clip (Bottom) (Welded to Item 1)
	16	4	1005-A	3/16" x 1/2" Roll Pin
	17	2	1040-A	3/8"-16 x 3/4" SHCS
	18	1	1008-B	1/4"-20 x 1/4" Set Screw



7 5/8" UHT BACKUP CYLINDER ASSEMBLY

2nd GENERATION
ASSEMBLY NO. BUC7623

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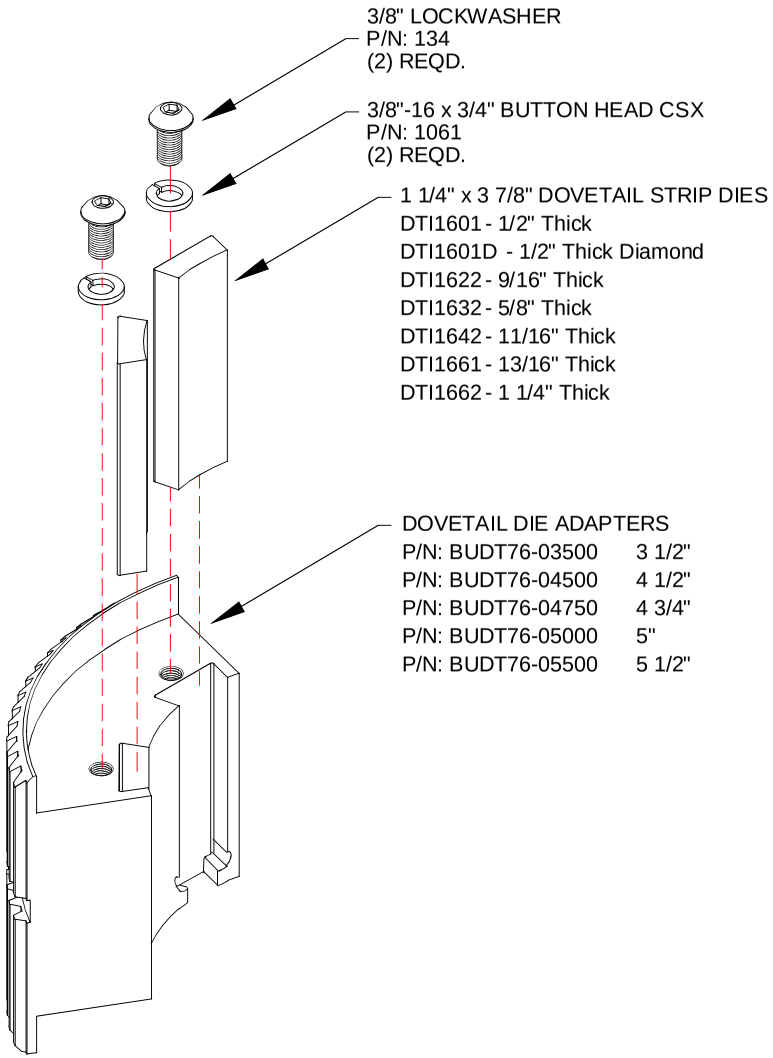
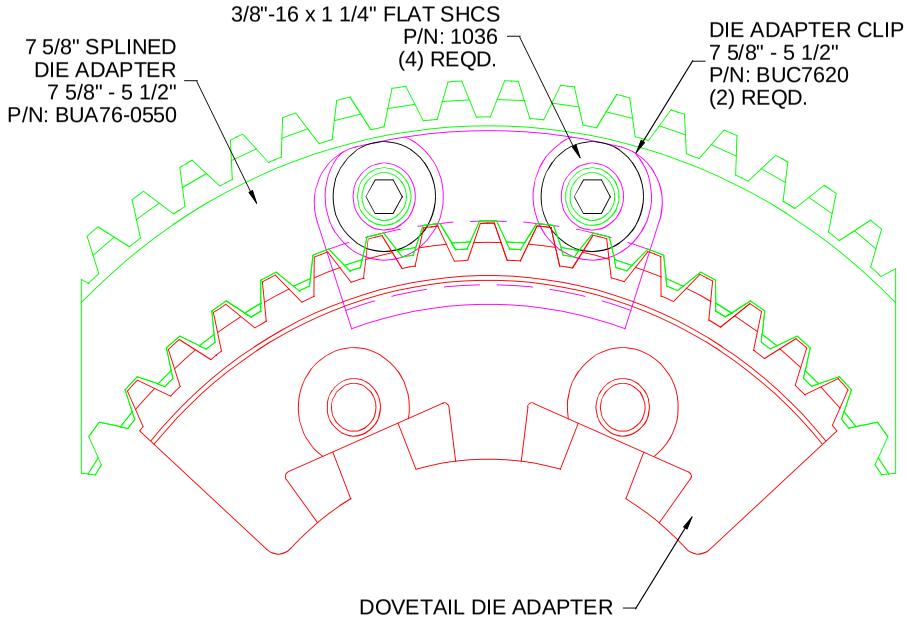
REV. #	LOG #	DATE
		03/29/04

REF: P:\Manuals\Equip Manuals\Dwgs\BUC7625\Cylinder 2nd.wpg





7 5/8" BACKUP
DOVETAIL DIE ADAPTER

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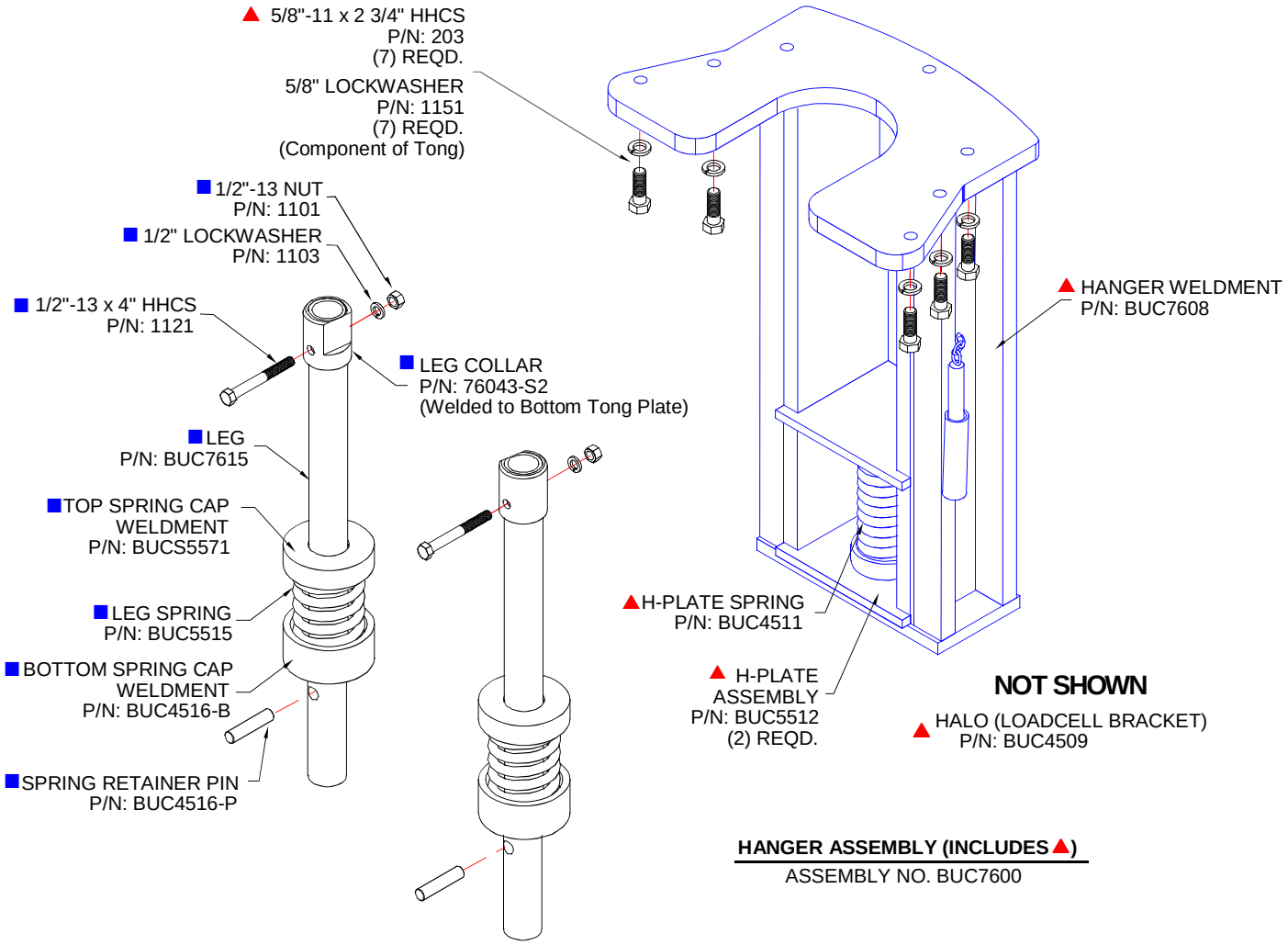
1		02/07/05
REV. #	LOG #	DATE

REF: P:\Manuals\Equip Manuals\Dwgs\BUC7625\Die Adapter rev1.wpg

NOT SHOWN:

SEE VALVE BANK ASSEMBLY

VALVE PACKAGE
P/N: VP7625UHT



LEG ASSEMBLY (INCLUDES ■)

ASSEMBLY NO. BUC7670

HANGER ASSEMBLY (INCLUDES ▲)

ASSEMBLY NO. BUC7600

MOUNTING KIT ASSEMBLY
7 5/8" UHT BACKUP
TO 7 5/8" UHT TONG

ASSEMBLY NO. MK7600

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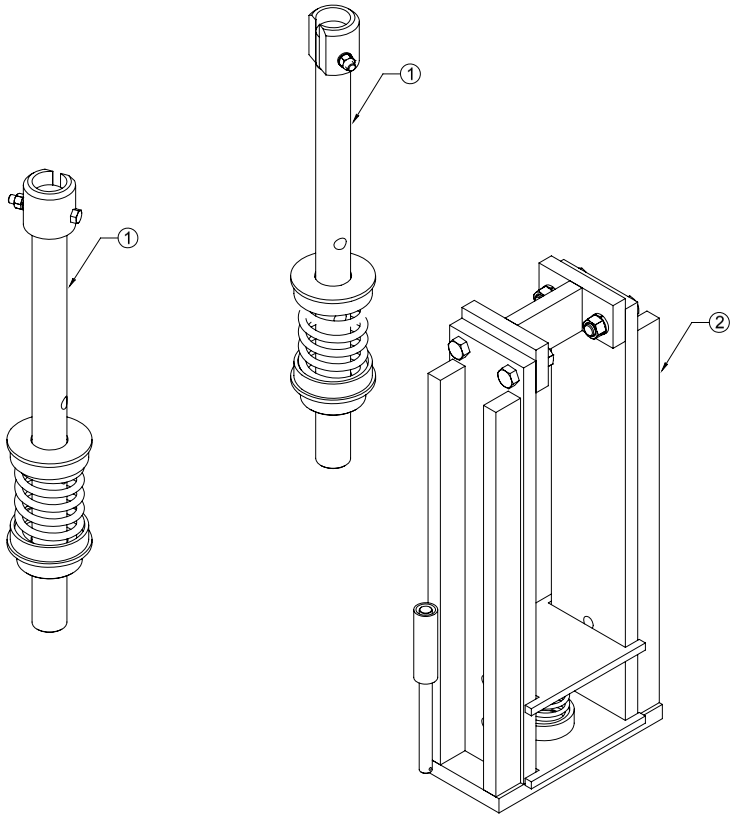
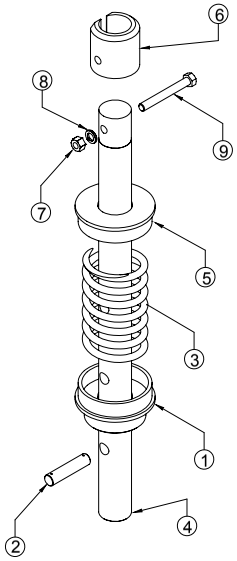
REV. #	LOG #	DATE
		03/17/04

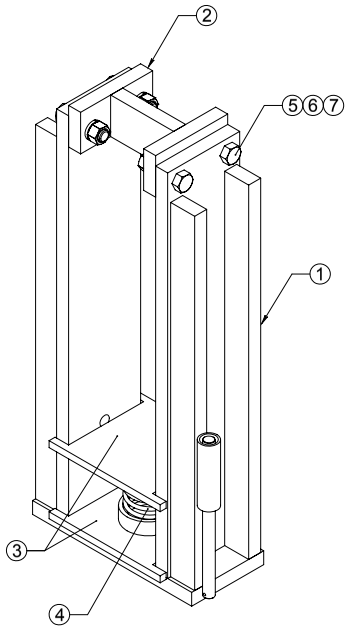
REF: P:\Manuals\Equip Manuals\Dwgs\BUC7625\Mounting Kit.wpg

ASSEMBLY NO. MK7600-04			
Item #	Qty.	Part Number	Part Name
1	2	BUC7670-01	LEG ASSEMBLY
2	1	BUCF7625	REAR HANGER





LEG ASSEMBLY NO. BUC7670-01			
Item #	Qty.	Part Number	Part Name
1	1	BUC4516-B	BOTTOM SPRING CAP WELDMENT
2	1	BUC4516-P	SPRING RETAINER PIN
3	1	BUC5515	LEG SPRING
4	1	BUC7615-01	TONG LEG
5	1	BUCS5571	TOP SPRING CAP
6	1	76043-s2	LEG SOCKET
7	1	1101	NUT, HEX, 1/2-13
8	1	1103	1/2" LOCKWASHER
9	1	1121	1/2"-13 x 4" HHCS



REAR HANGER ASSEMBLY NO. BUCF7625			
Item #	Qty.	Part Number	Part Name
1	1	BUCF7626	HANGER WELDMENT
2	1	BUCF7603	HANGER MOUNT WELDMENT
3	2	BUC5512	SPRING RETAINER WELDMENT
4	1	BUC4511	SPRING
5	4	1176	3/4"-10 X 3" HHCS
6	4	1171	3/4" LOCKWASHER
7	4	1176-A	3/4" GR. 8 NUT

MOUNTING KIT ASSEMBLY
8 5/8” UHT BACKUP
TO 7 5/8” UHT TONG

ASSEMBLY NO. MK7600-04

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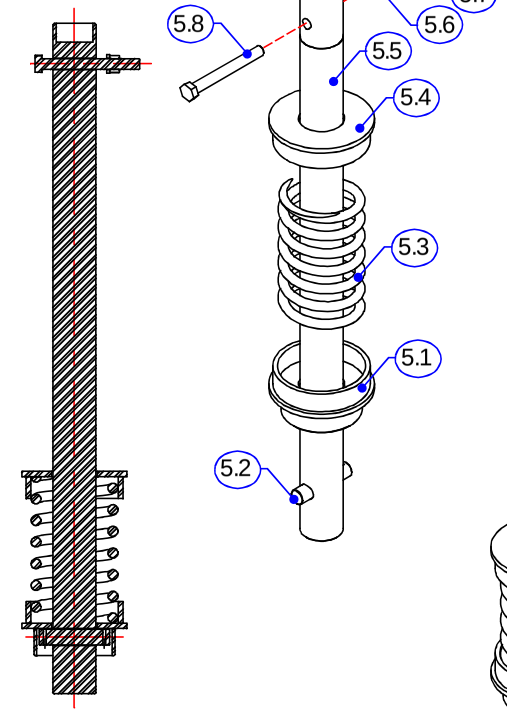
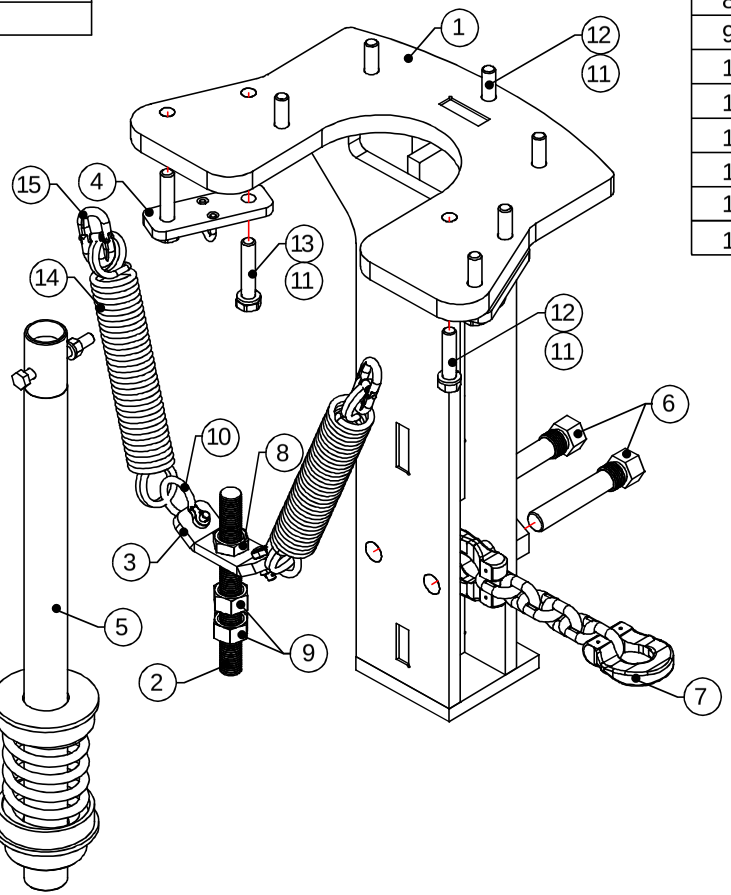
REV. #	LOG #	DATE
		10/16/09

BUCT7620-01

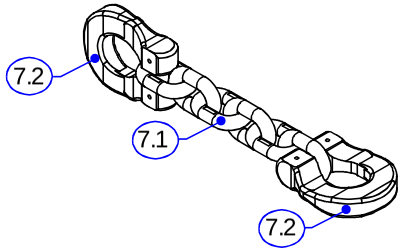
Item #	Qty.	Part Number	Part Name
5.1	1	BUC4516-B	BOTTOM SPRING CAP WELDMENT
5.2	1	BUC4516-P	SPRING RETAINER PIN
5.3	1	BUC5515	LEG SPRING
5.4	1	BUCS5571	TOP SPRING CAP
5.5	1	BUCT7619	TONG LEG
5.6	1	1103	1/2" LOCKWASHER
5.7	1	1101	1/2"-13 HEX NUT
5.8	3	X2-45	1/2"-13 x 4 1/2" HHCS



SECTION VIEW



Item #	Qty.	Part Number	Part Description
1	1	BUCT7609	TENSION STYLE HANGER WELDM.
2	1	BUCT7616	FULL THREADED REAR SPRING ROD
3	1	BUCT7617	SPRING TENSION BRACKET
4	2	BUCT7618	SPRING ANCHOR WELDMENT
5	2	BUCT7620-01	TONG LEG ASSEMBLY
6	2	BUCM4017-01	LINE PULL LOAD CELL HANGER PIN
7	1	BUCT7635	BREAK OUT CHAIN ASSEMBLY
8	1	1323	1"-14 NYLOCK JAM NUT
9	2	1210	1"-8 HEX NUT
10	2	40027-S5	5/16" 3/4 TON SCREW PIN SHACKLE
11	9	1151	5/8" LOCKWASHER
12	5	203	5/8"-11 x 2 3/4" HHCS
13	4	204-A	5/8"-11 x 3 1/4" HHCS
14	2	SMH1501-X	EXTENSION SPRING
15	2	40027-S3	5/16" CONNECTING LINK



BUCT7635

Item #	Qty.	Part Number	Part Name
7.1	1	BUCT7637	1/2" CHAIN 6 LINKS
7.2	2	BUCT7638	1/2" COUPLING LINK

TENSION STYLE BACKUP MOUNTING KIT ASSEMBLY

ASSEMBLY NO. MKBUCT7625-01

APPROX. WEIGHT (LBS.) = 250

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4225 HWY. 90 EAST
BROUSSARD, LA 70518
(318) 837-8847

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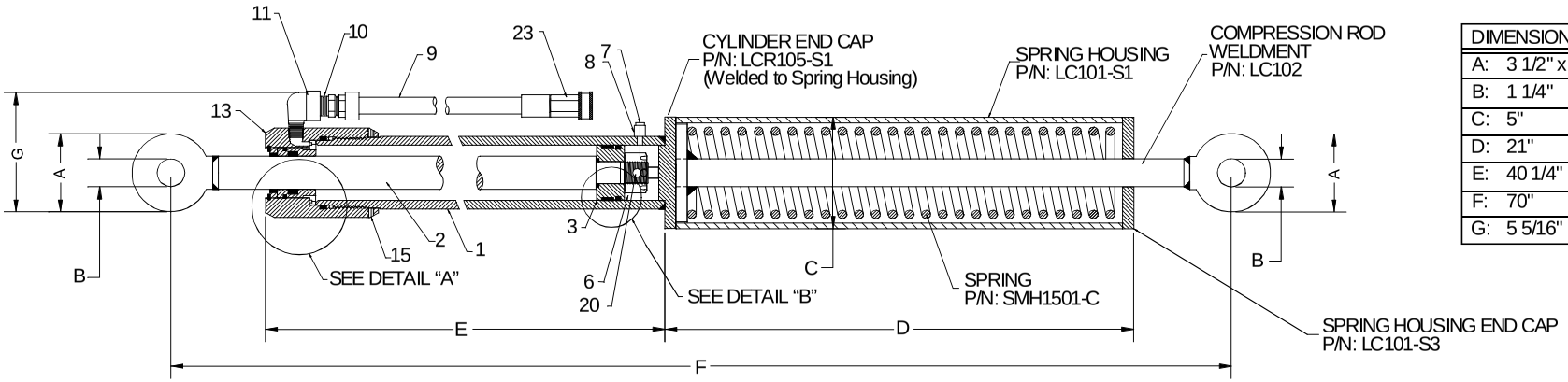
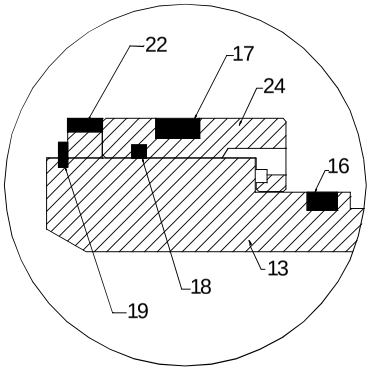


DIMENSIONAL DATA
A: 3 1/2" x 3/4"
B: 1 1/4"
C: 5"
D: 21"
E: 40 1/4"
F: 70"
G: 5 5/16"

★SEAL KIT P/N: ASAP100

BILL OF MATERIALS

	Item	Qty.	Description	P/N
	1	1	HYD/AIR CYLINDER BARREL	LCR105
	2	1	CYLINDER ROD WELDMENT	LCR112
	3	1	PISTON	LCR106
★	4	1	WEARBAND	W25000500
★	5	1	POLYPACK 2 1/8" x 2 1/2" x 3/16"	18702125
	6	1	1"-12 SLOTTED HEX NUT	1209
	7	1	1/2" FLUSH PLUG W/ 1/8" ORIFICE	1657
	8	1	1/2" HALF COLLAR	1380
	9	1	1/2" x 120" HOSE ASSY. MNPT x FJIC SWVL	LCR107-A
	10	1	3/8" MNPT x 1/2" MJIC ADAPTER	1466
	11	1	3/8" STREET EL W/ORIFICE	LCR109
	12	---	----------	----------
	13	1	GLAND CAP	LCR119
	14	---	----------	----------
	15	2	1/4"-20 x 3/8" SET SCREW	1015
★	16	1	O RING 2 7/8"ID, 3 1/4"OD, 3/16"W	2-336
★	17	1	POLYPACK 1 1/2" x 1 7/8" x 3/8"	18701500-375
★	18	1	O RING 2"ID, 2 1/4"OD, 1/8"W	2-226
	19	1	INTERNAL SNAP RING (N-1300-225)	1947
	20	1	1/4" x 1 1/2" ROLL PIN	1008-A
★	21	1	O RING 1"ID, 1 1/4"OD, 1/8"W	2-214
★	22	1	SEAL NP CR14938	CR14938
	23	1	QUICK DISCONNECT 1/2" FEMALE SNAPTITE	1430
	24	1	GLAND	LCR113



DETAIL "A"
SCALE: 3X

SPECIFICATIONS

MAXIMUM SPRING TRAVEL (PRELOAD TO SOLID) ..... 4.143 in.

MAXIMUM ALLOWABLE LOAD (SPRING FULLY COMPRESSED) ..... 4,092 lbs.

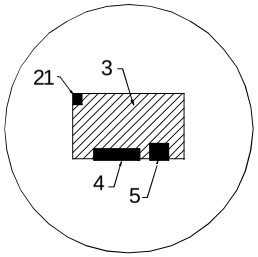
PRESSURE REQUIRED TO LIFT MAXIMUM ALLOWABLE LOAD ..... 1,303 psi

MAXIMUM ALLOWABLE INTERNAL PRESSURE ..... 3,000 psi

CYLINDER I.D. ..... 2.50 in.

ROD O.D. ..... 1.50 in.

STROKE ..... 34.94 in.



DETAIL "B"
SCALE: 3X

LIFT CYLINDER ASSEMBLY

ASSEMBLY NUMBER LCR100-C

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		03/29/04
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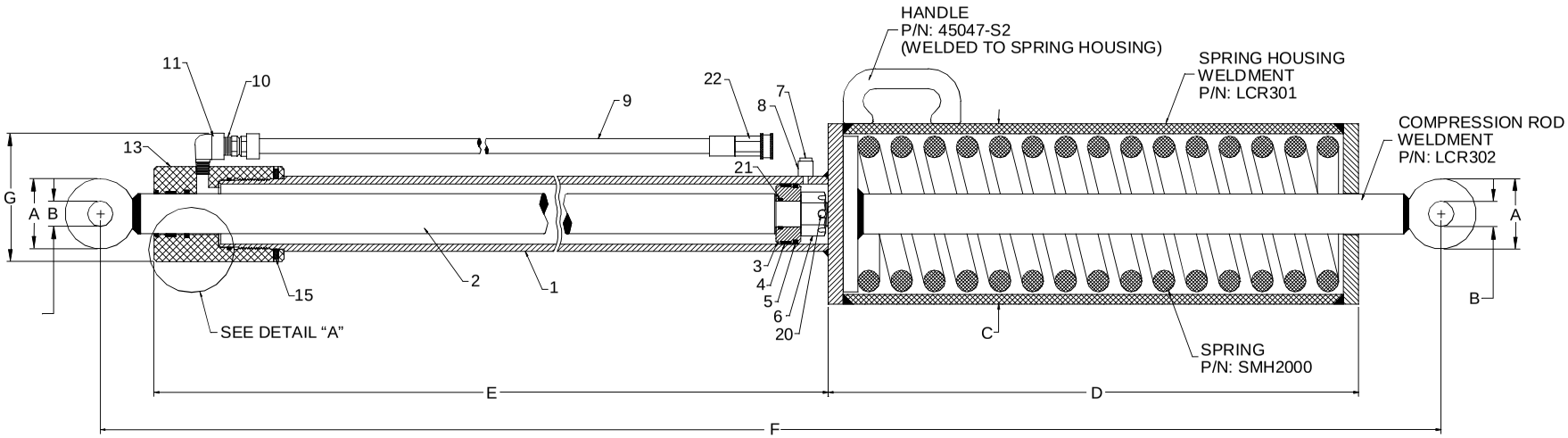
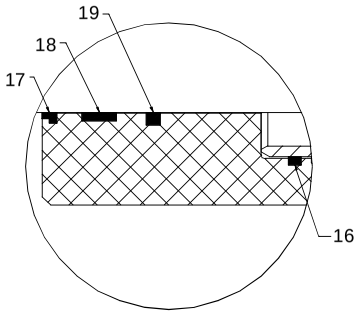
REF: P:\Manuals\Equip Manuals\Dwgs\LCR\LCR100-C.wpg



★ SEAL KIT P/N: ASAP300

BILL OF MATERIALS

Item	Qty.	Description	P/N
1	1	HYD/AIR CYLINDER BARREL	LCR122
2	1	CYLINDER ROD WELDMENT	LCR118
3	1	PISTON	LCR121
★ 4	1	WEARBAND	W30000500
★ 5	1	POLYPACK 2 5/8" x 3" x 3/16"	18702625
6	1	1 1/4"-12 SLOTTED NUT	1381
7	1	1/2" NPT FLUSH PLUG W/ 1/8" ORIFICE	1657
8	1	1/2" HALF COLLAR	1380
9	1	1/2" x 120" HOSE ASSY. MNPT x FJIC SWVL	LCR107-A
10	1	3/8" MNPT x 1/2" MJIC ADAPTER	1466
11	1	3/8" STREET EL W/ORIFICE	LCR109
12	---	----------	----------
13	1	GLAND	LCR123
14	---	----------	----------
15	2	1/4"-20 x 1/2" SET SCREW	1019
★ 16	1	O RING 3 3/8"ID, 3 5/8"OD, 1/8"W	2-237
★ 17	1	WIPER	959-21
★ 18	1	WEARBAND	W2250500
★ 19	1	POLYPACK 2" x 2 3/8" x 3/16"	18702000
20	1	1/4" x 2" ROLL PIN	1009B
★ 21	1	O RING 1 1/4"ID, 1 1/2"OD, 1/8"W	2-218
22	1	QUICK DISCONNECT 1/2" FEMALE SNAPTITE	1430



DETAIL "A"
SCALE: 3X

SPECIFICATIONS

MAXIMUM SPRING TRAVEL (PRELOAD TO SOLID)	11.9 in.
MAXIMUM ALLOWABLE STATIC LOAD (WITH 6.1" SPRING COMPRESSION STILL AVAILABLE)	3,800 lbs.
MAXIMUM ALLOWABLE LOAD (SPRING FULLY COMPRESSED)	7,812 lbs.
PRESSURE REQUIRED TO LIFT MAXIMUM ALLOWABLE LOAD	2,000 psi
MAXIMUM ALLOWABLE INTERNAL PRESSURE	3,000 psi
CYLINDER I.D.	3 in.
ROD O.D.	2 in.
STROKE	35.640 in.

DIMENSIONAL DATA
A: 3 1/2" x 3/4"
B: 1 1/4"
C: 9"
D: 25"
E: 41 1/2"
F: 74.800"
G: 6 3/8"

LIFT CYLINDER ASSEMBLY

ASSEMBLY NUMBER LCR300

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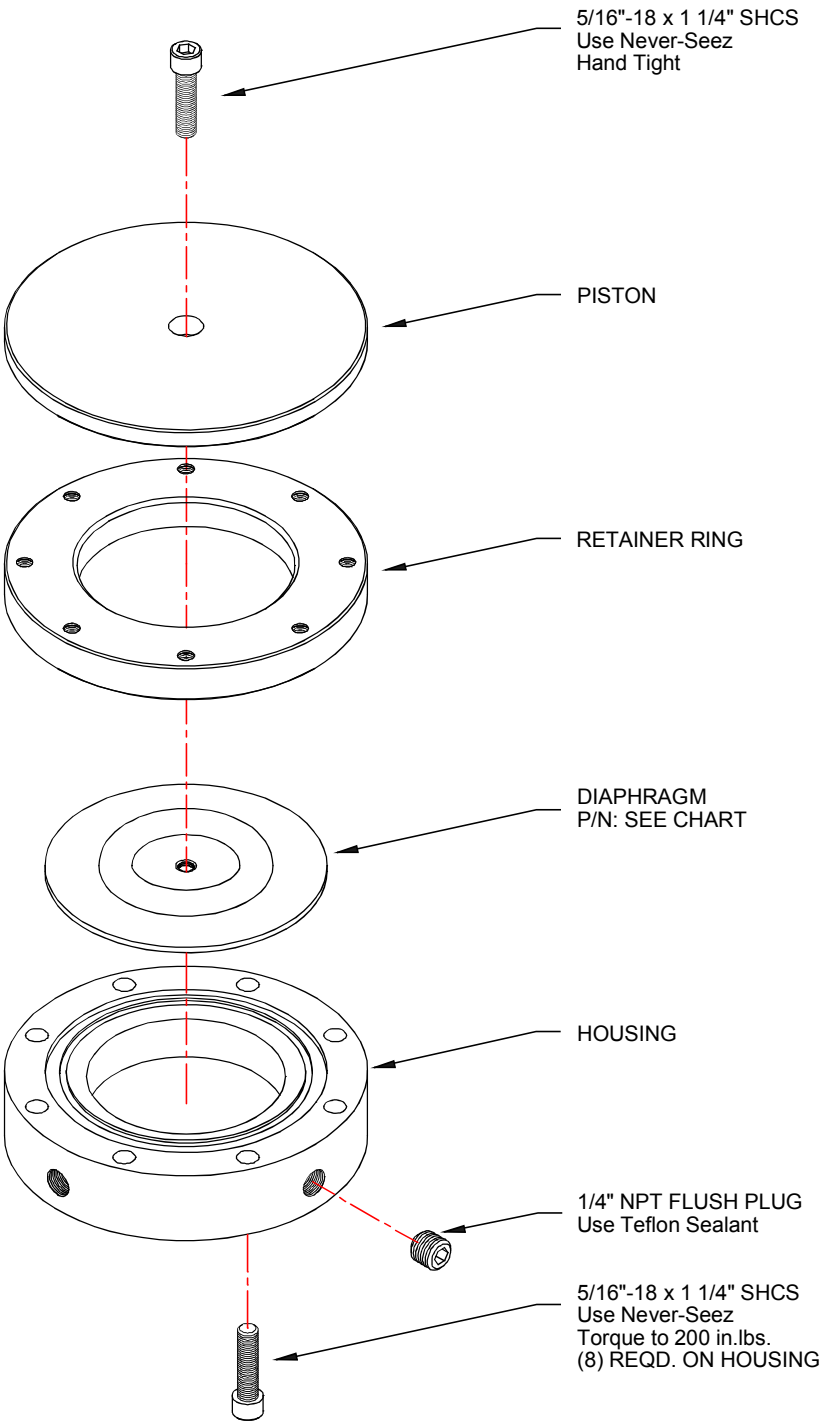
CLINCHER® LOAD CELL AND TORQUE GAUGE ASSEMBLIES

The **CLINCHER®** Tong and Backup are available in versions which accommodate compression load cells or tension style load cells. All information contained in this Technical Manual refers to products which utilize com pression load cells. Contact SUPERIOR for inform ation concerning products using tension load cells.

Part Number SM30-32-C	
Torque Rating	30,000 ft lbs
Handle Length 32	inches
Loadcell Type Com	pression
Loadcell Manufacturer	SUPERIOR MANUFACTURING & HYDRAULICS
Loadcell Part Number CLC200	
Torque Gauge Mfr.	TOTCO or equivalent
Torque Gauge Size	6"
Gauge Mount	“L” Bracket
Hose Length 6	ft.
Assembly Documentation	Calibration Certificate

CLINCHER® Load cells and Torque Gauges are produced by several m anufacturers. The information provided by MD TOTCO or Acadiana Oilfield Instruments may not be applicable to all torque gauges or load cells. This reference in formation is provided with the perm ission of MD TOTCO and Acadiana Oilfield Instruments.



LOAD CELL SIZE	DIAPHRAGM P/N
6.44 SQ.IN.	CLC203
8.0 SQ.IN.	CLC205
12.0 SQ.IN.	CLC206
16.1 SQ.IN.	CLC207
25.0 SQ.IN.	CLC208

COMPRESSION LOAD CELL

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REV. #	LOG #	DATE
1		07/03/02

REF: S:\Equip Manuals\Dwgs\Load Cell Comp rev1.wpg

CLINCHER® LOAD CELL AND TORQUE GAUGE ASSEMBLIES

To request copy of
Compression Torque System
Technical Manual,
please contact:

Superior Manufacturing & Hydraulics
4225 Hwy. 90 East
Broussard, LA 70518
Phone: 337-837-8847
Fax: 337-837-8839
www.superior-manf.com

SECTION 13 MOTOR SERVICE MANUALS

To request copy of Rineer Motor Service Manuals, please contact:

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Fax: 337-837-8839
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SECTION 14 VALVE TECHNICAL DATA

To request copy of Valve Technical Data, please contact:

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